



# MASSACHUSETTS WATER RESOURCES AUTHORITY

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Frederick A. Laskey  
Executive Director

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## **ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING**

*Chair: (vacant)*  
*Vice-Chair: H. Vitale*  
*Committee Members:*  
J. Carroll  
K. Cotter  
J. Foti  
A. Pappastergion  
J. Walsh

to be held on

Wednesday, October 14, 2015

Location: 100 First Avenue, 2nd Floor  
Charlestown Navy Yard  
Boston, MA 02129

Time: 10:00 a.m.

### **AGENDA**

#### **A. Information**

1. Delegated Authority Report – September 2015
2. FY16 Year-to-Date Financial Update and Summary

#### **B. Approvals**

1. Approval of Letter of Credit and Direct Floating Rate Revolving Loan Agreements
2. Proposed Changes to Pension Benefits

#### **C. Contract Amendment/Change Order**

1. Dental Insurance: Delta Dental of Massachusetts, Contract A591, Amendment 2

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Administration, Finance and Audit Committee

September 16, 2015

A meeting of the Administration, Finance and Audit Committee was held on September 16, 2015 at the Authority headquarters in Charlestown. Vice-Chairman Vitale presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Foti, Pappastergion, Pena and Walsh; Mr. Cotter joined the meeting in progress. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Brian Rozowsky, Mike Hornbrook, Michele Gillen, John Sabino, Dave Duest, Steve Estes-Smargiassi, Karen Gay-Valente, Tom Durkin, Kathy Soni, Matt Horan, and Bonnie Hale. The meeting was called to order at 10:25 a.m.

**Information**

Internal Audit Department Activities Report

Staff summarized the Department's activities over the past year, and there was general discussion and question and answer (ref. agenda item A.1).

Delegated Authority Report – July and August 2015

There was question and answer on some items contained in the report (ref. agenda item A.2).

Fourth Quarter FY15 Orange Notebook

Staff gave a presentation highlighting some of the indicators in the report, and there was general discussion and question and answer (ref. agenda item A.3).

(Mr. Cotter joined the meeting.)

Staff summarized the remaining two information items, there was general discussion and question and answer:

- FY15 Year-end Capital Improvement Program Spending Report (ref. agenda item A.4)
- FY15 Year-end Financial Update and Summary (ref. agenda item A.5).

**Approvals**

**\*Bond Defeasance of Future Debt Service**

Staff explained the rationale for the bond defeasance recommendation. Mr. Blackmon requested that such recommendations in the future contain additional information about the various scenarios that were analyzed beforehand. The Committee recommended approval of the defeasance (ref. agenda item B.1).

The meeting adjourned at 11:25 a.m.

\* Approved as recommended at September 16, 2015 Board of Directors meeting.

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** October 14, 2015  
**SUBJECT:** Delegated Authority Report –September 2015



COMMITTEE: Administration, Finance & Audit

INFORMATION  
 VOTE

Barbie Aylward, Administrator A & F  
Joanne Gover, Admin. Systems Coordinator  
Preparer/Title

  
Michele S. Gillen  
Director, Administration  
John Sabino  
Director of Procurement

**RECOMMENDATION:**

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period September 1 – 30, 2015.

This report is broken down into three sections:

- Awards of Construction, non-professional and professional services contracts and change orders and amendments in excess of \$25,000, including credit change orders and amendments in excess of \$25,000;
- Awards of purchase orders in excess of \$25,000; and
- Amendments to the Position Control Register, if applicable.

**BACKGROUND:**

The Board of Directors' Management Policies and Procedures, as amended by the Board's vote on October 14, 2009, delegate authority to the Executive Director to approve the following:

Construction Contract Awards:

Up to \$1 million if the award is to the lowest bidder; or up to \$500,000 if the award is to other than the lowest bidder.

Change Orders:

Up to 25% of the original contract amount or \$250,000, whichever is less, where the change increases the contract amount, and for a term not exceeding an aggregate of six months; and for any amount and for any term, where the change decreases the contract amount. The delegations for cost increases and time can be restored by Board vote.

Professional Service Contract Awards:

Up to \$100,000 and one year with a firm; or up to \$50,000 and one year with an individual.

Non-Professional Service Contract Awards:

Up to \$250,000 if a competitive procurement process has been conducted, or up to \$100,000 if a procurement process other than a competitive process has been conducted.

Purchase or Lease of Equipment, Materials or Supplies:

Up to \$1 million if the award is to the lowest bidder; or up to \$500,000 if the award is to other than the lowest bidder.

Amendments:

Up to 25% of the original contract amount or \$250,000, whichever is less, and for a term not exceeding an aggregate of six months.

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

**BUDGET/FISCAL IMPACT:**

Recommendations for delegated authority approval include information on the budget/fiscal impact related to the action. For items funded through the capital budget, dollars are measured against the approved capital budget. If the dollars are in excess of the amount authorized in the budget, the amount will be covered within the five-year CIP spending cap. For items funded through the Current Expense Budget, variances are reported monthly and year-end projections are prepared at least twice per year. Staff review all variances and projections so that appropriate measures may be taken to ensure that overall spending is within the MWRA budget.

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS SEPTEMBER 1 - 30, 2015

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	09/01/15	<b>PUMP, GEAR BOX AND DIESEL ENGINE UPGRADE PRISON POINT AND COTTAGE FARM CSO FACILITIES</b> FURNISH AND INSTALL FOUR AUXILIARY LUBE OIL PUMPS ON THE RIGHT ANGLE GEARS, ASSOCIATED ELECTRICAL WIRING AND CONDUIT; EXTEND CONTRACT TERM BY 60 CALENDAR DAYS FROM SEPTEMBER 3, 2015 TO NOVEMBER 2, 2015.	7452	10	IPC LYDON, LLC	\$85,000.00
C-2.	09/01/15	<b>HVAC BUILDING AUTOMATION AND HVAC UNIT REPLACEMENT PRELIMINARY DESIGN, FINAL DESIGN AND ENGINEERING SERVICES DURING CONSTRUCTION DEER ISLAND TREATMENT PLANT</b> INCREASE LEVEL OF EFFORT FOR REPLACEMENT OF EVAPORATOR COILS INSIDE EXISTING HVAC UNITS DUE TO NEW REFRIGERANTS REQUIRED BY THE MORE ENERGY-EFFICIENT, ENVIRONMENTALLY FRIENDLY UNITS; REPLACE EXISTING CONTROL SENSORS IN HVAC SYSTEM TO AVOID INTERFACE COMPATIBILITY PROBLEMS WITH NEW CONTROL SYSTEM; REPLACE THREE ADDITIONAL AIR HANDLING UNITS DUE TO POOR CONDITION OF EXISTING UNITS; EXTEND CONTRACT TERM BY 180 CALENDAR DAYS FROM APRIL 21, 2020 TO OCTOBER 19, 2020.	7111	1	ARCADIS U.S., INC.	\$98,775.00
C-3.	09/21/15	<b>HEAT LOOP 20-INCH DIAMETER EXPANSION JOINT REPLACEMENT PHASE 2 - DEER ISLAND TREATMENT PLANT</b> AWARD OF CONTRACT TO LOWEST RESPONSIVE BIDDER FOR THE REMOVAL AND REPLACEMENT OF ONE HEAT LOOP 20-INCH DIAMETER EXPANSION JOINT REPLACEMENT, PHASE 2 FOR A TERM OF 274 CALENDAR DAYS.	7063C	AWARD	WILLIAM M. COLLINS CO., INC.	\$113,700.00
C-4.	09/23/15	<b>ELEVATOR MAINTENANCE SERVICES AT VARIOUS AUTHORITY FACILITIES</b> AWARD OF CONTRACT TO LOWEST RESPONSIVE BIDDER FOR PREVENTIVE, NON-EMERGENCY AND EMERGENCY REPAIR SERVICES FOR 14 ELEVATORS LOCATED AT VARIOUS MWRA WATER AND WASTEWATER FACILITIES FOR A TERM OF 730 CALENDAR DAYS.	OP-273	AWARD	BBE CORP., BUCKLEY ELEVATOR	\$240,850.00
C-5.	09/29/15	<b>INSTALLATION OF ENERGY-EFFICIENT LED EXTERIOR LIGHTING AT THE JOHN J. CARROLL WATER TREATMENT PLANT</b> AWARD OF ENERGY EFFICIENT CONTRACT TO NSTAR PREQUALIFIED VENDOR FOR THE REPLACEMENT OF 120 EXTERIOR LIGHTS WITH ENERGY-EFFICIENT LED LIGHTS AT THE JOHN J. CARROLL WATER TREATMENT PLANT FOR A TERM OF 150 CALENDAR DAYS. REBATE TOTALING \$24,995.57 WILL BE RECEIVED FROM NSTAR UPON PROJECT COMPLETION, RESULTING IN A PAYBACK PERIOD OF 5.2 YEARS.	OP-298	AWARD	HORIZON SOLUTIONS, LLC	\$76,669.76

## PURCHASING DELEGATED AUTHORITY ITEMS - September 1 - 30, 2015

NO.	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	9/3/15 SUPPLY AND DELIVER OF HYDROGEN SULFIDE CONTROL CHEMICALS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF HYDROGEN SULFIDE CONTROL CHEMICALS FOR THE FRAMINGHAM EXTENSION SEWER AND FRAMINGHAM EXTENSION RELIEF SEWER IN AN AMOUNT NOT TO EXCEED \$48,300.	WRA-4069		CHEMTRADE CHEMICALS US, LLC	\$48,300.00
P-2.	9/3/15 TWO PROFILING WATER QUALITY BUOYS, ASSOCIATED HARDWARE, AND SOFTWARE AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO PROFILING WATER QUALITY BUOYS, ASSOCIATED HARDWARE, SOFTWARE, AND SERVICES. TO REPLACE BUOYS THAT ARE 13 YEARS OLD AND NO LONGER SUPPORTED BY THE ORIGINAL MANUFACTURER.	WRA-4064		YSI INCORPORATED	\$247,663.00
P-3.	9/10/15 TWO REPLACEMENT SCUM GEAR REDUCTION DRIVE BASES AND STUFFING BOXES AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO REPLACEMENT PRIMARY SCUM GEAR REDUCTION DRIVE BASES AND STUFFING BOXES FOR THE DEER ISLAND TREATMENT PLANT. THE DEER ISLAND TREATMENT PLANT HAS FOUR BATTERIES OF PRIMARY CLARIFIERS, BATTERIES A, B, C, AND D. PRIMARY BATTERIES A THRU D CONTAIN EIGHT SCUM MIXERS. AS PART OF DEER ISLAND'S PREDICTIVE AND PREVENTIVE MAINTENANCE PROGRAMS, STAFF CONDUCT ACOUSTIC AND VIBRATION TESTING TO MONITOR THE OVERALL CONDITION OF THE DRIVES. STAFF NOTED ON RECENT INSPECTIONS OF ALL EIGHT DRIVES THAT TWO OF THE EIGHT BASES ARE PRODUCING EXCESSIVE VIBRATION, WHICH IS AN INDICATION OF IMPENDING STRUCTURAL FAILURE FROM CORROSION, AND RECOMMENDED REPLACEMENT. THE STUFFING BOXES ARE INTEGRAL PARTS OF THE BASE ASSEMBLY, STAFF FURTHER RECOMMENDED THAT THE STUFFING BOX ASSEMBLY FOR EACH OF THE TWO BASES ALSO BE REPLACED.	WRA-4088Q		AMH ENTERPRISES INC.	\$25,533.50
P-4.	9/10/15 FOUR TRAILERS FOR GROUNDS MAINTENANCE WEST AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR FOUR TRAILERS FOR GROUNDS MAINTENANCE WEST. GROUNDS MAINTENANCE WEST IS RESPONSIBLE FOR THE GROUNDSKEEPING AND LANDSCAPING OF 19 WESTERN LOCATIONS AND 73 MILES OF AQUEDUCTS. IN ORDER TO ACCOMPLISH THIS, TRACTORS OUTFITTED WITH "SLOPEMASTER" MOWING ARMS OR TOW-BEHIND MOWING DECKS, AS WELL AS RIDER AND WALK-BEHIND MOWERS ARE MOBILIZED THROUGHOUT THE AREA ON FLATBED TRAILERS. ALL FOUR OF THE EXISTING TRAILERS ARE AT LEAST 11 YEARS OLD AND ARE SHOWING THEIR AGE. REPLACEMENT CRITERIA FOR THIS TYPE OF EQUIPMENT IS 10 YEARS, AND THAT ITS CONDITION WARRANTS REVIEW. ALL FOUR EXISTING TRAILERS MEET OR EXCEED THE ESTABLISHED CRITERIA. TO ENSURE UNINTERRUPTED SERVICE AND MAXIMUM RELIABILITY AND AVAILABILITY, STAFF RECOMMENDED THAT ALL FOUR TRAILERS BE REPLACED WITH SIMILAR-SIZED AND TYPE TRAILERS.	WRA-4079		KLEM TRACTOR, INC.	\$51,700.00
P-5.	9/10/15 SUPPLY AND DELIVERY OF HYDROFLUOROSILICIC ACID AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF HYDROFLUOROSILICIC ACID TO THE JOHN J CARROLL WATER TREATMENT PLANT.	WRA-4072		SOLVAY FLUORIDES, LLC	\$420,127.56
P-6.	9/15/15 ADDITIONAL WIRELESS MODEMS AWARD OF A SOLE SOURCE PURCHASE ORDER FOR ADDITIONAL WIRELESS MODEMS NECESSARY TO COMPLETE THE CONVERSION OF MWRA'S WATER METERS AND MONITORING SITES TO WIRELESS. IN 2011, MWRA PURCHASED 256 TELOG MODEMS FOR THE WATER METER CONVERSION PROJECT. INCLUDED IN THAT PURCHASE ORDER WERE ANTENNAS AND SPECIALIZED SOFTWARE DEVELOPMENT FOR THIS PROJECT TO BE PERFORMED BY TELOG. WHILE AWAITING THE SOFTWARE DEVELOPMENT, SOME OF THESE MODEMS WERE USED TO ADDRESS PROBLEMS THAT WERE ARISING IN MWRA'S HYDROGEN SULFIDE MONITORING SYSTEM, AND AT SOME OTHER WASTEWATER FACILITIES AND RTUS. THE EXISTING SOFTWARE WAS CONSIDERED SUFFICIENT FOR THESE SYSTEMS AND THE DECISION WAS MADE TO USE SOME OF THE PREVIOUSLY PURCHASED MODEMS TO CONVERT THESE TO WIRELESS. TO DATE, 152 OF THE WATER METER AND MONITORING SITE MODEMS HAVE BEEN INSTALLED. DUE TO THE UNANTICIPATED WASTEWATER USE OF THE MODEMS, 75 ADDITIONAL TELOG MODEMS NEED TO BE PURCHASED IN ORDER TO COMPLETE THE WATER METER SYSTEM CONVERSION PROJECT.			TELOG INSTRUMENTS, INC.	\$53,250.00
P-7.	9/15/15 ONE 350-HORSE POWER MOTOR AND ONE 400-HORSE POWER MOTOR AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE 350-HORSE POWER MOTOR AND ONE 400-HORSE POWER MOTOR FOR THE NUT ISLAND HEADWORKS FACILITY AS SPARES TO REDUCE DOWNTIME IN THE EVENT OF A FAILURE. THE NUT ISLAND HEADWORKS PROVIDES SCREENING AND GRIT REMOVAL FOR ALL FLOWS ORIGINATING IN MWRA'S SOUTHERN COLLECTION SYSTEM PRIOR TO CONVEYANCE TO SOUTH SYSTEM PUMP STATION ON DEER ISLAND VIA THE INTER-ISLAND TUNNEL FOR PROCESSING. THE NUT ISLAND HEADWORKS IS EQUIPPED WITH AN ODOR CONTROL SYSTEM, DESIGNED TO PROVIDE TREATMENT SO THAT THERE ARE NO DETECTABLE ODORS AT THE FACILITY. THERE ARE FOUR CENTRIFUGAL EXHAUST FANS AND TWO-SPEED MOTORS (TWO 350-HORSE POWER AND TWO 400-HORSEPOWER) THAT ARE PART OF THE ODOR CONTROL SCRUBBER SYSTEM. THE MOTORS HAVE BEEN IN SERVICE SINCE 1998, AND ARE SHOWING THEIR AGE. IF ONE MOTOR IS OUT OF SERVICE, THERE IS NO REDUNDANCY IN THE EVENT OF A SECOND FAILURE ON THAT PARTICULAR SIDE OF THE ODOR CONTROL SYSTEM. WITHOUT A FAN MOTOR IN OPERATION ON ANY GIVEN SIDE OF THE ODOR CONTROL SYSTEM, THERE WOULD BE A POTENTIAL FOR A VIOLATION OF NUT ISLAND'S AIR QUALITY PERMIT. HAVING SPARES ON HAND WILL ALSO ALLOW STAFF TO HAVE THE EXISTING MOTORS OVERHAULED AND BE READY AS ADDITIONAL RELIABLE BACK-UPS IN THE EVENT OF FUTURE FAILURES.	WRA-4075		ASSOCIATED ELECTRO-MECHANICS	\$105,150.00
P-8.	9/16/15 PROVIDE LABORATORY EQUIPMENT PREVENTATIVE AND CORRECTIVE MAINTENANCE SERVICE AWARD OF A THREE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE LABORATORY EQUIPMENT PREVENTATIVE AND CORRECTIVE MAINTENANCE SERVICES FOR THE DEPARTMENT OF LABORATORY SERVICES. MWRA RECENTLY AWARDED TWO SEPARATE CONTRACTS TO THE REMI GROUP, LLC, TO PROVIDE MAINTENANCE SERVICES ON THE DEPARTMENT OF LABORATORY SERVICES' (DLS) MAJOR LABORATORY INSTRUMENTS, ONE FOR THE AGILENT INSTRUMENTS AND ONE FOR THE PERKIN ELMER INSTRUMENTS. DLS REQUIRES ANOTHER CONTRACT FOR A LABORATORY INSTRUMENT REPAIR SPECIALIST TO PERFORM PREVENTATIVE AND CORRECTIVE MAINTENANCE SERVICES ON A NUMBER OF OTHER LABORATORY INSTRUMENTS AND EQUIPMENT AT ITS FIVE LABORATORIES. UNDER THE TERMS OF THIS THREE-YEAR CONTRACT, THE AWARDED VENDOR WILL BE REQUIRED TO PERFORM ANNUAL PREVENTATIVE MAINTENANCE AND/OR CERTIFICATION OF EACH INSTRUMENT OR PIECE OF EQUIPMENT ONCE PER YEAR.	WRA-4082Q		ECONOMY LABORATORY SERVICES	\$30,600.00

NO.	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT	
P-9.	9/16/15	ONE SKID STEER LOADER AND ONE COMPACT LOADER AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE SKID STEER LOADER AND ONE COMPACT LOADER. WINTER OF 2015 PRODUCED UNPRECEDENTED SNOWSTORM ACCUMULATION TOTALS THAT MADE SNOW REMOVAL AT ALL MWRA FACILITIES EXTREMELY CHALLENGING. BASED ON THOSE CHALLENGES, IN PREPARATION FOR THE APPROACHING WINTER 2015, STAFF RECOMMENDED THAT MWRA AUGMENT ITS EXISTING FLEET OF EQUIPMENT THAT CAN BE USED FOR SNOW REMOVAL AT TWO KEY FACILITIES, THE CHELSEA FACILITY AND THE DEER ISLAND TREATMENT PLANT. BOTH OF THE NEW COMPACT LOADERS WILL BE OUTFITTED WITH A FRONT-MOUNT SNOW THROWER ATTACHMENT, WHICH WILL ALLOW EFFICIENT CLEARING OF SIDEWALKS, WALKWAYS AND DRIVEWAYS. STAFF FROM PIPE MAINTENANCE WASTEWATER PLAN TO USE THE NEW TRACK-MOUNTED LOADER TO CLEAR WALKWAYS AND DRIVEWAYS AT 22 MWRA FACILITIES, INCLUDING THE CHELSEA FACILITY AND THE NUT ISLAND HEADWORKS.	WRA-4078		SUNBELT RENTALS, INC.	\$121,179.00
P-10.	9/16/15	SUPPLY AND DELIVERY OF ULTRA-LOW-SULFUR, #2 DIESEL FUEL AWARD OF A PURCHASE ORDER FOR THE SUPPLY AND DELIVERY OF UP TO 294,000 GALLONS OF ULTRA-LOW SULFUR, #2 DIESEL FUEL FOR THE DEER ISLAND THERMAL/POWER PLANT TO BE DELIVERED TO DEER ISLAND OVER A ONE WEEK PERIOD, FOR A PER GALLON COST DETERMINED DAILY.	ENE40		DENNIS K. BURKE INC.	\$514,500.00
P-11.	9/21/15	FIVE WATER QUALITY SONDES AWARD OF A SOLE SOURCE PURCHASE ORDER FOR FIVE WATER QUALITY SONDES FOR THE DEPARTMENT OF LABORATORY SERVICES. FOUR SONDES ARE FOR MONITORING WATER QUALITY IN MWRA'S RESERVOIRS AND ONE IS FOR USE BY THE DEPARTMENT OF LABORATORY SERVICES FOR OPEN WATER MONITORING IN BOSTON HARBOR. WITH THE RECENT ACQUISITION OF MWRA'S NEW MONITORING BUOYS FOR DEPLOYMENT IN THE WACHUSETT RESERVOIR, WHICH WILL PROVIDE THE MOST ADVANCED MONITORING AND EARLY DETECTION OF CONTAMINATION EVENTS FOR THOSE MOORED LOCATIONS ON THE WACHUSETT RESERVOIR, STAFF RECOMMENDED PURCHASING ADDITIONAL NEW SENSOR TECHNOLOGY THAT IS COMPATIBLE WITH THESE BUOYS TO SUPPORT ADDITIONAL AND BROADENED WATER QUALITY AND CONTAMINANT MONITORING EFFORTS.			YSI INCORPORATED	\$94,986.30
P-12.	9/23/15	ONE ROTATING HORIZONTAL SPLIT PUMP ASSEMBLY AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE ROTATING HORIZONTAL SPLIT PUMP ASSEMBLY FOR THE COMMONWEALTH AVENUE PUMP STATION. THE COMMONWEALTH AVENUE PUMP STATION IS EQUIPPED WITH FOUR ELECTRICALLY DRIVEN PUMPS, EACH WITH THE CAPABILITY OF PUMPING NINE MILLION GALLONS OF WATER PER DAY TO THE CITY OF NEWTON'S INTERMEDIATE HIGH SERVICE AREA. DURING NORMAL OPERATIONS, ONLY TWO OF THE FOUR PUMPS ARE REQUIRED TO MEET SYSTEM DEMAND. THE PUMP STATION WAS REHABILITATED IN 2000. DURING THIS REHABILITATION, FOUR NEW PUMPS WERE INSTALLED. DUE TO CONTINUED USE, AND THE NORMAL AND EXPECTED WEAR AND TEAR OF THE ROTATING ASSEMBLY FOR EACH PUMP, STANDARD PRACTICE IS TO REBUILD THE PUMPS AT THIS TIME. DUE TO THE CONTINUED DEMAND AND THE IMPORTANCE TO THE CITY OF NEWTON'S WATER SUPPLY, STAFF RECOMMENDED THE PURCHASE OF ONE SPARE ROTATING ASSEMBLY TO LIMIT THE DOWN TIME OF ANY SINGLE PUMP.	WRA-4035Q		DIVERSIFIED PUMP & COMPRESSOR	\$26,655.00
P-13.	9/23/15	FOUR CENTRIFUGE FRONT SEAL HOLDERS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR FOUR CENTRIFUGE FRONT SEAL HOLDERS FOR THE DEER ISLAND TREATMENT PLANT. CENTRIFUGES IN THE RESIDUALS COMPLEX AT THE DEER ISLAND TREATMENT PLANT REDUCE THE WATER CONTENT OF SLUDGE TO 5%-6% WITH A 90% SOLIDS CAPTURE RATE. A ROTATING SCREW CONVEYOR TAKES THICKENED SLUDGE PACKED AGAINST THE INNER CENTRIFUGE BOWL AND MOVES IT TOWARD THE DISCHARGE END OF THE CENTRIFUGE. MWRA STAFF PERFORM PREDICTIVE AND PREVENTIVE MAINTENANCE TASKS ON THE CENTRIFUGES. AS PART OF THESE MAINTENANCE TASKS, FRONT CONVEYOR SEALS AND SEAL HOLDERS ARE EVALUATED FOR WEAR AND LEAKAGE POTENTIAL. WHEN A FRONT SEAL HOLDER IS IDENTIFIED IN A FAILING OR FAILED STATE, STAFF REPLACE IT. THESE SEAL HOLDERS ARE INVENTORY ITEMS THAT ARE TYPICALLY STOCKED IN THE DEER ISLAND WAREHOUSE FOR TIMELY AND EFFICIENT REPAIR. RECENT REPLACEMENTS HAVE DEPLETED INVENTORY STOCK REQUIRING REPLENISHMENT.	WRA-4076Q		ALFA LAVAL THERMAL INC.	\$28,437.32
P-14.	9/23/15	TEN REPLACEMENT PRIMARY/SECONDARY COLLECTOR GEAR REDUCTION DRIVES AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TEN REPLACEMENT PRIMARY/SECONDARY COLLECTOR GEAR REDUCTION DRIVES FOR THE DEER ISLAND TREATMENT PLANT. AS PART OF DITP'S PREDICTIVE MAINTENANCE PROGRAM, STAFF PERFORM OIL ANALYSIS TO MONITOR THE OVERALL CONDITION OF THE DRIVES. WHEN A DRIVE IS IN A FAILING OR FAILED STATE, STAFF REPLACE THE DRIVE; DRIVES ARE CONSIDERED INVENTORY ITEMS AND STORED IN THE WAREHOUSE FOR TIMELY AND EFFICIENT REPAIR. RECENT REPLACEMENTS OF THESE REDUCTION DRIVES HAVE DEPLETED INVENTORY STOCK, REQUIRING REPLENISHMENT.	WRA-4085Q		KOELLMANN GEAR CORPORATION	\$41,500.00
P-15.	9/23/15	TWO FIRE PUMP CONTROLLERS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO FIRE PUMP CONTROLLERS FOR THE THERMAL/POWER PLANT AT DEER ISLAND TREATMENT PLANT. THE TWO EXISTING FIRE PUMP CONTROLLERS IN THE THERMAL/POWER PLANT WERE INSTALLED IN THE MID-1990S. THESE FIRE PUMP CONTROLLERS ARE A CRITICAL PART OF THE FIRE PROTECTION SYSTEM FOR THE THERMAL/POWER PLANT. THE SPRINKLERS WITHIN THE BUILDING ARE DEPENDENT ON THE FIRE PUMPS, WHICH BOOST THE PRESSURE OF THE WATER SUPPLY TO MEET THE STANDARDS SET FORTH BY THE MASSACHUSETTS DEPARTMENT OF PUBLIC SAFETY. THE MAIN CONTROL BOARDS IN THE EXISTING FIRE PUMP CONTROLLERS HAVE FAILED, WHICH PREVENT THE AUTOMATIC TRANSFER FROM "NORMAL" TO "EMERGENCY" POWER. IN ADDITION THE UNITS ARE APPROACHING THE END OF THEIR USEFUL LIFE AND REPLACEMENT PARTS ARE NO LONGER AVAILABLE BY THE ORIGINAL EQUIPMENT MANUFACTURER OR THROUGH THIRD-PARTY VENDORS.	WRA-4061		DANAHER SPECIALTY PRODUCTS	\$51,587.00



NO.	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-16. 9/23/15	<p><b>LABORATORY INFORMATION MANAGEMENT SYSTEM MAINTENANCE</b>  AWARD OF A SOLE SOURCE PURCHASE ORDER FOR MAINTENANCE AND SUPPORT OF MWRA'S LABORATORY INFORMATION MANAGEMENT SYSTEM. ON OCTOBER 17, 2007, THE BOARD APPROVED THE AWARD OF CONTRACT 6509A TO LAB WARE, INC., FOR A TERM OF 81 MONTHS FROM THE NOTICE TO PROCEED, TO DEVELOP AND IMPLEMENT A NEW LABORATORY INFORMATION MANAGEMENT SYSTEM OR LIMS. ON MARCH 20, 2013, THE EXECUTIVE DIRECTOR, UNDER DELEGATED AUTHORITY, APPROVED AMENDMENT 1 TO CONTRACT 6509A, WHICH PROVIDED MWRA WITH SOME FLEXIBILITY TO ADDRESS UNANTICIPATED NEEDS DURING THE DEVELOPMENT OF LIMS. WHEN THE ORIGINAL LIMS CONTRACT EXPIRED IN 2014, THE EXECUTIVE DIRECTOR, UNDER DELEGATED AUTHORITY, APPROVED A ONE-YEAR SOLE SOURCE CONTRACT WITH LAB WARE TO PROVIDE LIMS SYSTEM MAINTENANCE AND SERVICE. THE CONTRACT INCLUDED TECHNICAL ASSISTANCE, TELEPHONE SUPPORT, ON-LINE, WEB-BASED SUPPORT, AND ACCESS TO LAB WARE DEV TRACK, LAB WARE LAB TRACK, AND LAB WARE KNOWLEDGE TRACK. THAT PURCHASE ORDER WILL EXPIRE ON OCTOBER 31, 2015. BECAUSE OF THE IMPORTANCE OF LIMS IN TERMS OF REGULATORY REPORTING REQUIREMENTS, STAFF RECOMMENDED THAT MWRA CONTINUE THIS MAINTENANCE AND SERVICE FOR ANOTHER YEAR. PERIOD IS FOR NOVEMBER 1, 2015 THROUGH OCTOBER 31, 2016.</p>			LAB WARE, INC.	\$64,830.50
P-17. 9/23/15	<p><b>SUPPLY AND DELIVERY OF AQUA AMMONIA</b>  AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF AQUA AMMONIA TO THE JOHN J. CARROLL WATER TREATMENT PLANT.</p>	WRA-4087		UNIVAR USA, INC.	\$237,468.00
P-18. 9/29/15	<p><b>TWO HEAT EXCHANGERS</b>  AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO HEAT EXCHANGERS FOR THE DEER ISLAND TREATMENT PLANT. DEER ISLAND USES HEAT EXCHANGERS IN A NUMBER OF HEATING AND COOLING APPLICATIONS IN VARIOUS FACILITIES ACROSS DITP. STAFF RECENTLY NOTED LEAKING IN TWO HEAT EXCHANGERS. UPON FURTHER INSPECTION, IT WAS DETERMINED THAT BOTH THE HEAT EXCHANGER PLATES AND THE MANIFOLDS IN BOTH HEAT EXCHANGERS REQUIRE REPLACEMENT DUE TO EXCESSIVE CORROSION AND PINHOLE LEAKS. BOTH HEAT EXCHANGERS ARE ORIGINAL PLANT EQUIPMENT INSTALLED UNDER THE BOSTON HARBOR CONTRACT AND HAVE BEEN IN SERVICE FOR A LITTLE MORE THAN 20 YEARS.</p>	WRA-4089Q		JOHNSTONE SUPPLY COMPANY	\$35,610.00

POSITION CONTROL REGISTER (PCR) LOCATION CHANGES OCTOBER 2015 BOARD

<u>DATE OF CHANGE</u>	<u>POSITION TITLE</u>	<u>CURRENT PCR#</u>	<u>CURRENT COST CENTER</u>	<u>NEW PCR #</u>	<u>NEW COST CENTER</u>	<u>REASON FOR CHANGE</u>
9/2/2015	Executive Secretary	2250020	Enqual	8410006	Affirmative Action	To meet staffing needs in Affirmation Action department

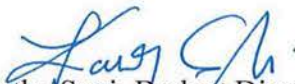
## STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** October 14, 2015  
**SUBJECT:** FY16 Financial Update and Summary



COMMITTEE: Administration, Finance & Audit

INFORMATION  
 VOTE

  
 Kathy Soni, Budget Director  
David Whelan, Budget Manager  
 Preparer/Title

  
Thomas J. Durkin  
 Director, Finance

**RECOMMENDATION:**

For information only. This staff summary provides the financial update and variance highlights for the first quarter of Fiscal Year 2016, comparing actual spending to the budget.

**DISCUSSION:**

Total year-to-date expenses are lower than budget by \$6.7 million or 3.9% and total revenues were higher than budget by \$445,000 or 0.2% for a net variance of \$7.2 million.

The expense variances by major categories are represented in the table below:

	FY16 Budget	FY16 Actual	\$ Variance	% Variance
Direct Expenses	\$50.5	\$48.9	-\$1.6	-3.1%
Indirect Expenses	\$16.6	\$16.3	-\$0.3	-2.1%
Debt Service	\$104.6	\$99.8	-\$4.8	-4.6%
<b>Total</b>	<b>\$171.7</b>	<b>\$164.9</b>	<b>-\$6.7</b>	<b>-3.9%</b>

The variances for the first quarter by major categories were:

- Lower Direct Expenses of \$1.6 million for Wages and Salaries, Maintenance, Workers Compensation, Utilities, and Other Services;
- Lower Indirect Expenses of \$347,000 for lower Watershed reimbursements and lower insurance costs, mostly for claims;
- Lower Debt Service Expense of \$4.8 million due to favorable short-term interest rates and the impact of defeasances related to reserve releases.

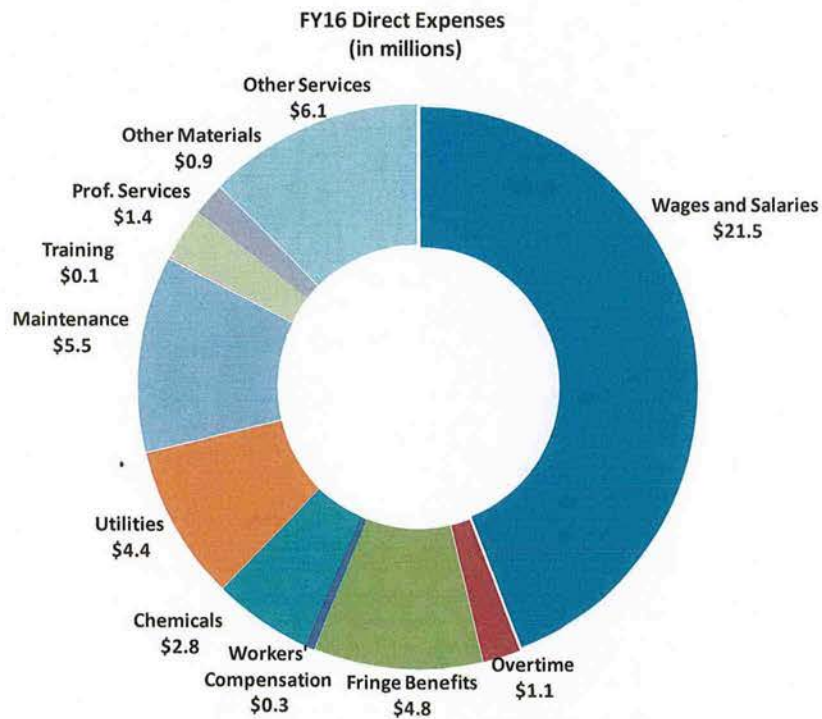
- Higher Revenues exceeding budget by \$445,000 due to higher investment income and other revenue.

As the year progresses, staff intend to once again deposit favorable debt service savings in the defeasance account.

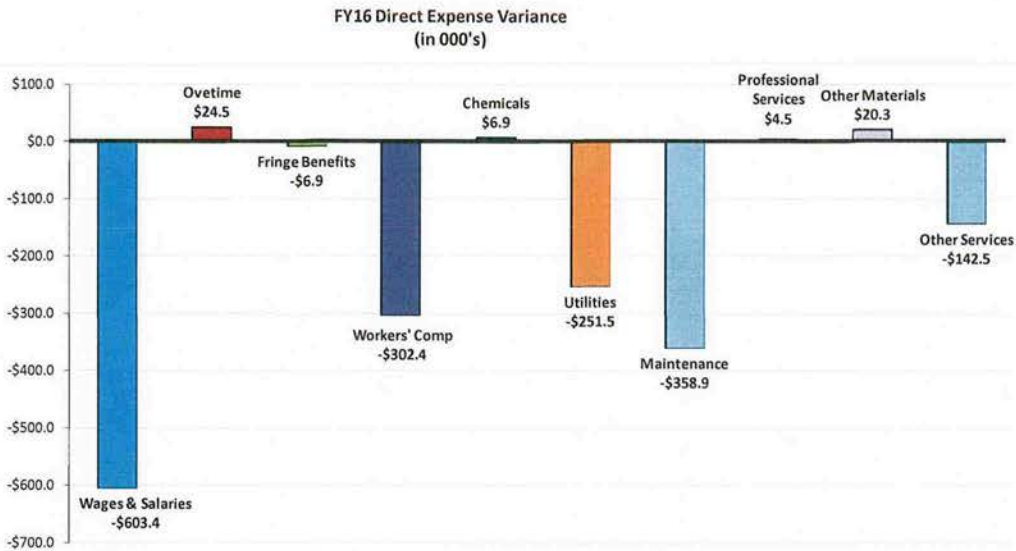
Please refer to Attachment 1 for a more detailed comparison by line item.

**Direct Expenses**

Direct expenses totaled \$48.9 million, \$1.6 million or 3.1% less than budgeted.



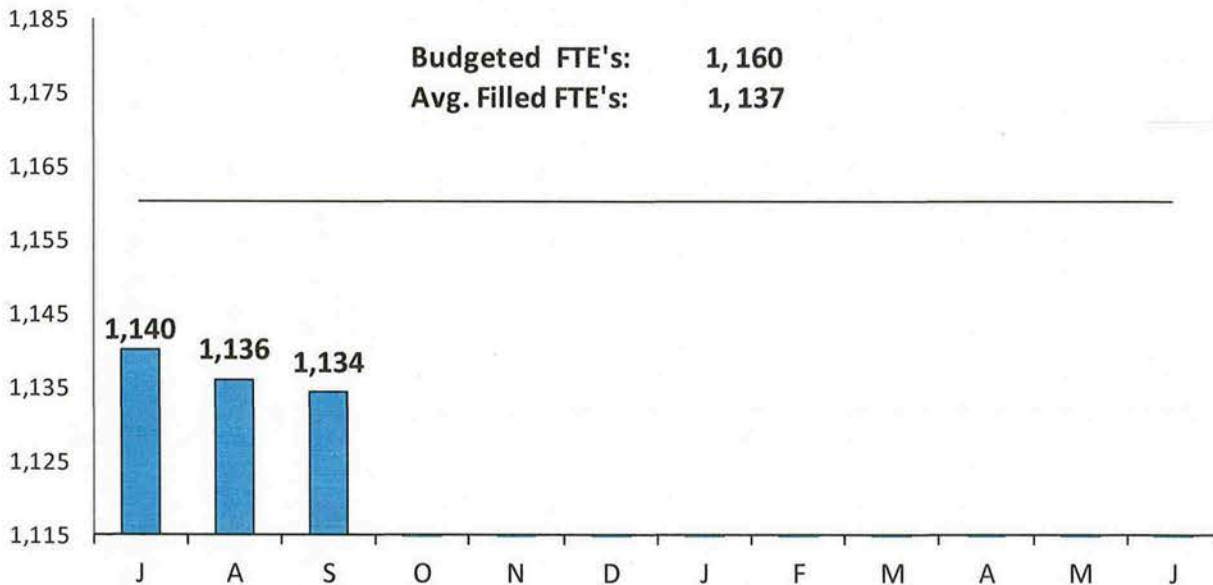
The underspending on direct expenses is related to Wages and Salaries, Maintenance, Workers' Compensation, Utilities, and Other Services, offset by overspending for Training & Meetings, Overtime, and Other Materials.



### Wages and Salaries

Wages and Salaries were underspent by \$603,000 or 2.7% mainly as a result of lower average Full Time Equivalent positions (FTEs) than budgeted and the salary mix differential between staff retiring at higher rates and new hires coming on board at lower rates. The average FTEs through September were 1,137, which was 23 positions lower than the 1,160 FTEs budgeted. Additionally, the Authority had two temporary employees.

### FY16 MWRA Full Time Equivalent (FTE) Position Trend



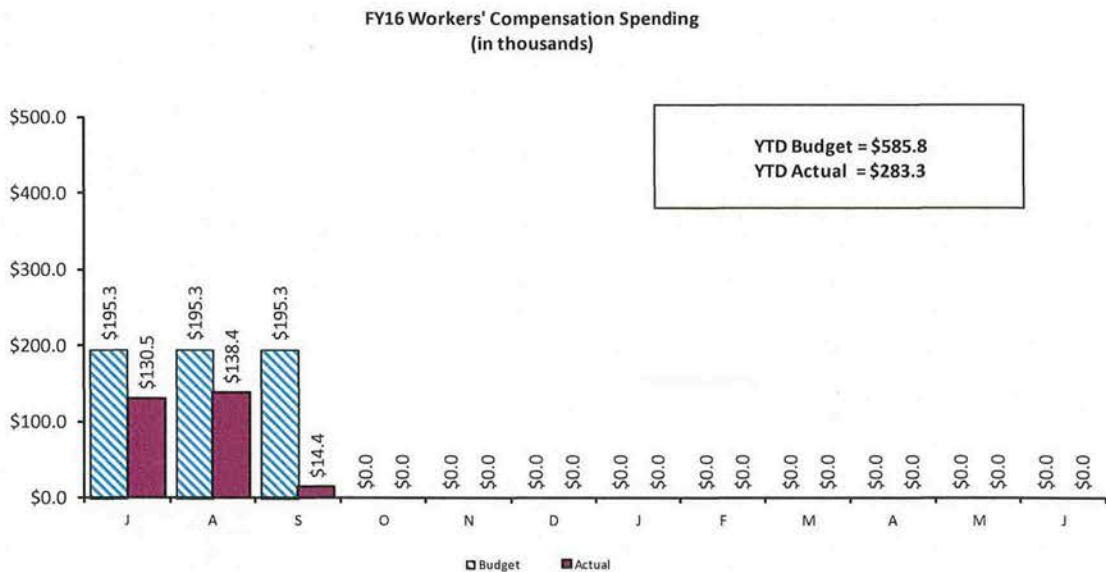
In September 2015, the Authority had 1,142 filled positions vs. 1,170 budgeted positions.

## Maintenance

Maintenance expenses were lower than budgeted by \$359,000 or 6.1% year-to-date. Services were underspent by \$780,000 primarily due to schedule shifts for several projects planned for this year. Materials were overspent by \$421,000 due to the purchase of unbudgeted items including the interior air monitoring system at Nut Island.

## Workers' Compensation

Workers' Compensation expenses were lower than budget by \$302,000 or 51.6% based on lower medical expenses of \$158,000 and compensation payments of \$143,000. The lower spending in September is the result of lump sum settlements in prior periods, thus lowering reserves. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.



# of Open Claims-Lost Time	62	61	62	0	0	0	0	0	0	0	0	0
# of Open Claims-Medical Only	22	17	23	0	0	0	0	0	0	0	0	0

## Utilities

Utilities were underspent \$252,000 or 5.5% for lower Electricity of \$696,000 mainly due to underspending at Deer Island of \$640,000 for over accrual at the end of FY15, lower commodity and transmission and distribution costs, and lower flows which resulted in less pumping demand and in Field Operations of \$50,000 primarily associated with delay of the completion of the new Spot Pond pump station and covered storage facility. This was offset by higher spending on Diesel Fuel of \$444,000 due the early purchase for Deer Island to take advantage of low market pricing. In September, 294,000 gallons of diesel fuel were purchased at a cost of \$1.57/gallon versus a budgeted price of \$2.75/gallon.

### **Other Services**

Other Services were lower than budget by \$143,000 or 2.3% due to lower spending for sludge pelletization services; \$16,000 for Grit and Screenings disposal services primarily due to lower quantities; \$32,000 for Space Lease Rentals for the Chelsea facility lease; \$24,000 for Other Rentals; \$16,000 for Police details; and \$10,000 for Telephone Services. The underspending is offset by higher spending on Other Services of \$36,000 for Ward Street Headworks radio tower demolition.

### **Training & Meetings**

Training and Meetings spending was more than budget by \$30,000 or 82.8% primarily associated with timing of MIS training initiatives.

### **Overtime**

Overtime expenses were higher than budgeted by \$24,000 or 2.3% for greater spending in Water Valve Maintenance to reconfigure system flows associated with providing Lynn water, responding to a Cambridge water main break, and start-up at Spot Pond.

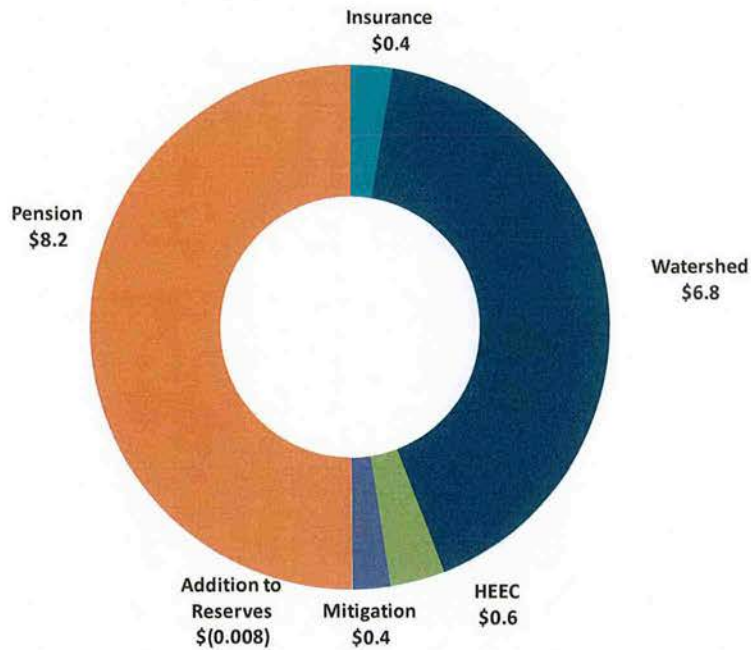
### **Other Materials**

Other Materials were higher than budget by \$20,000 or 2.2% mainly due Computer Hardware of \$87,000 and Lab and Testing Supplies of \$49,000 mainly due to receipt of equipment ordered in FY15 and received in Quarter 1 of FY16, Vehicle Purchases of \$35,000 due to timing, and Health & Safety of \$31,000. The overspending is offset by lower Equipment and Furniture purchases of \$84,000, Work Clothes of \$27,000, and Other Materials of \$23,000 due to timing and Vehicle Expense of \$64,000 mostly due to lower fuel prices.

### **Indirect Expenses**

Indirect expenses total \$16.3 million, \$347,000 or 2.1% lower than budget. The majority of the FY16 underspending is related to lower Watershed Reimbursement of \$255,000 for FY15 over accrual and lower Insurance costs of \$115,000 mostly related to claims.

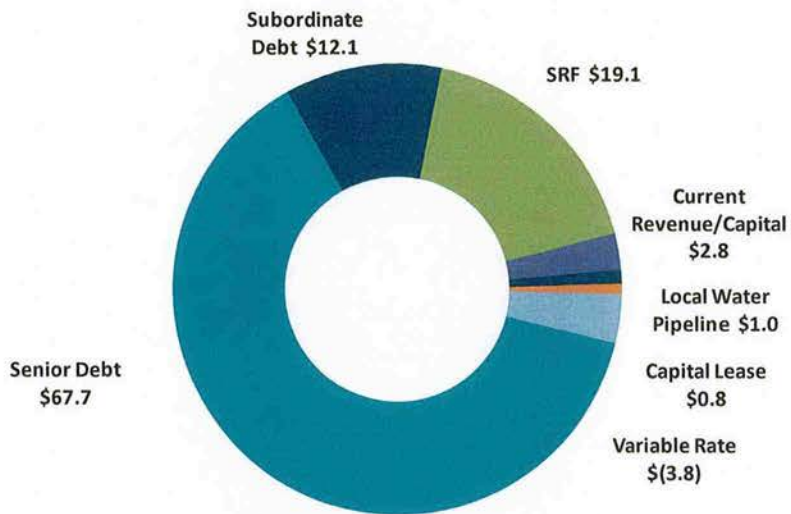
FY16 Indirect Expenses  
(in millions)



**Debt Service Expenses**

Debt Service expenses include the principal and interest payment for fixed debt, the variable subordinate debt, and the State Revolving Fund (SRF) obligation, the commercial paper program for the local water pipeline projects, current revenue for capital, and the Chelsea facility lease payment.

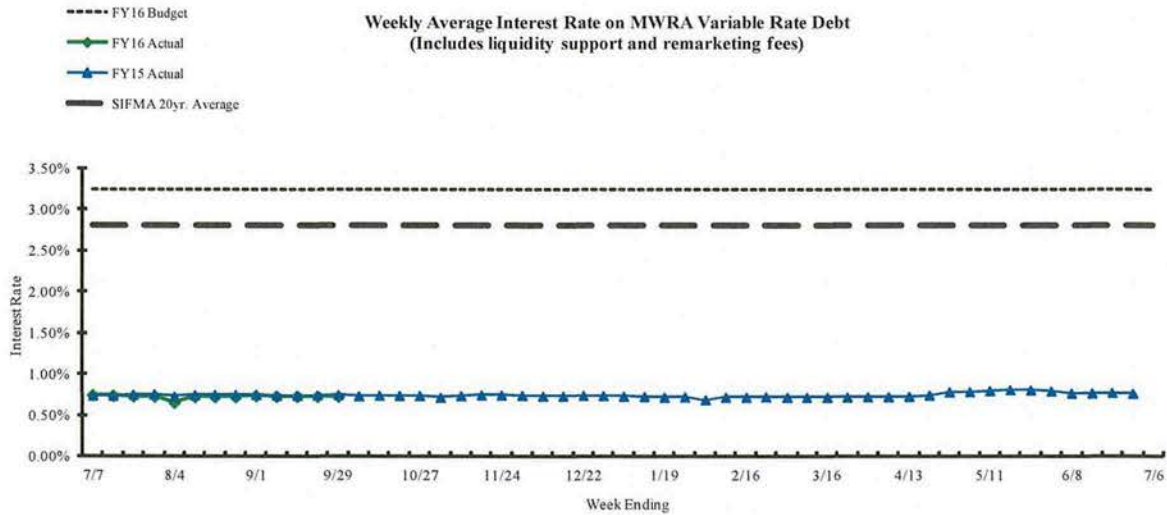
FY16 Debt Expenses  
(in millions)





Debt Service expenses for the first quarter totaled \$99.8 million which was \$4.8 million or 4.6% lower than budget. Of the \$4.8 million, \$3.8 million of the variance is due to the low short-term interest rates and \$1.0 million is the favorable impact of defeasances related to reserve releases.

The graph below reflects the variable rate trend by month over the past year in comparison with FY15 Actuals and the FY16 Budget for the same period.



## Revenue

Revenue for year to date through September totaled \$179.6 million which was \$445,000 or 0.2% higher than budget.

The higher non-rate Revenue is due to greater Investment Income of \$247,000 and Miscellaneous Revenue of \$198,000 mainly due to sale of surplus equipment of \$97,000, timing of Rutland/Holden payments of \$20,000, receipt of a Massachusetts Emergency Management Agency grant for \$17,000, and other smaller items totaling approximately \$64,000.

The higher Investment Income is associated with the higher than budgeted short-term rates offset by the effect of some investments being called earlier than projected.

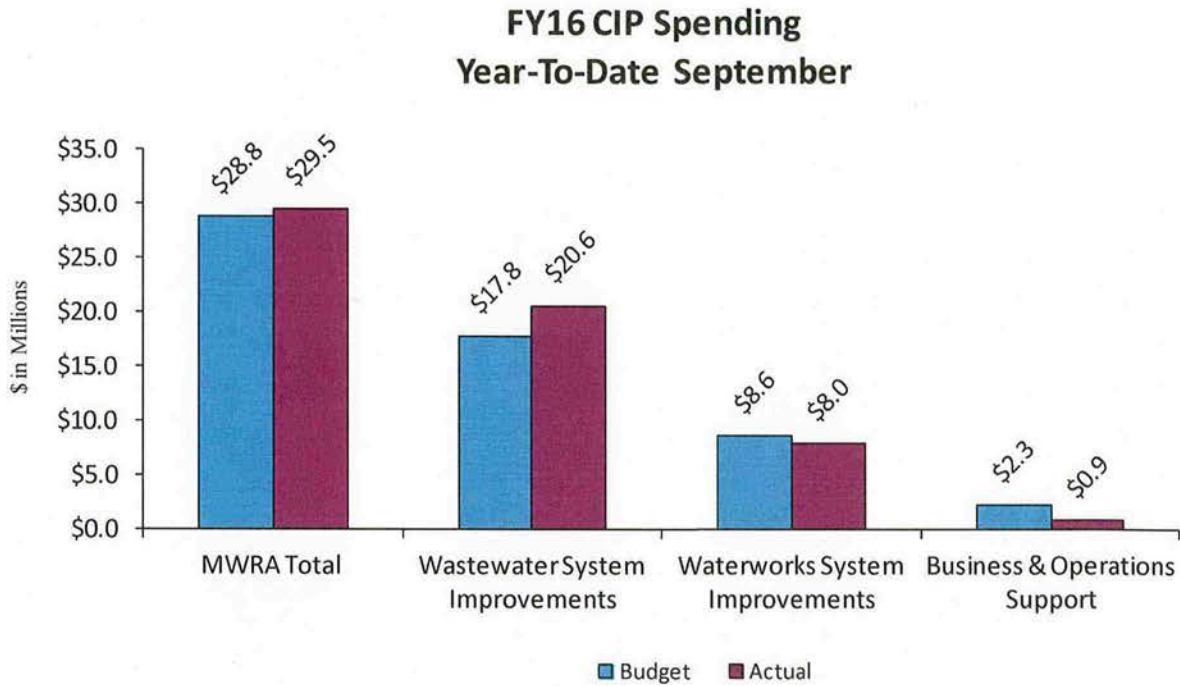
Please refer to Attachment 2 for a more detailed comparison by line item.

## FY16 Capital Improvement Program

Spending year-to-date in FY16 totals \$29.5 million, \$0.7 million or 2.6% higher than budget. After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) program, the Local Water Pipeline program, and the community managed Combined Sewer Overflow (CSOs) projects, underspending is \$5.1 million or 25.5%.

Overspending was reported in Wastewater of 2.8 million offset by underspending in Business and Operations Support of \$1.4 million and Waterworks of \$656,000.

Spending By Program:



\$ in Millions	Budget	Actuals	\$ Var.	% Var.
<b>Wastewater System Improvements</b>				
Interception & Pumping	1.2	0.5	-0.7	-56.5%
Treatment	7.8	6.4	-1.4	-17.9%
Residuals	0.0	0.0	0.0	N/A
CSO	6.5	13.8	7.3	112.5%
Other	2.3	-0.1	-2.4	-105.3%
<b>Total Wastewater System Improvements</b>	<b>\$17.8</b>	<b>\$20.6</b>	<b>\$2.8</b>	<b>15.9%</b>
<b>Waterworks System Improvements</b>				
Drinking Water Quality Improvements	2.6	1.2	-1.4	-52.6%
Transmission	1.2	0.4	-0.8	-68.3%
Distribution & Pumping	4.3	5.2	0.9	21.7%
Other	0.6	1.1	0.6	107.2%
<b>Total Waterworks System Improvements</b>	<b>\$8.6</b>	<b>\$8.0</b>	<b>-\$0.7</b>	<b>-7.6%</b>
<b>Business &amp; Operations Support</b>	<b>\$2.3</b>	<b>\$0.9</b>	<b>-\$1.4</b>	<b>-61.6%</b>
<b>Total MWRA</b>	<b>\$28.8</b>	<b>\$29.5</b>	<b>\$0.7</b>	<b>2.6%</b>

The main reasons for the overspending were:

1. **Combined Sewer Overflow (CSO)** of \$7.3 million – due to the Cambridge Water use of \$5.6M and updated cost estimates of approximately \$2.0 million due to unforeseen utility locations and private utility coordination, subsurface conditions, and additional engineering services during construction.
2. **Water Distribution and Pumping** of \$931,000 – mainly for Spot Pond Supply Mains Rehabilitation of \$665,000 due to progress on Webster Avenue Bridge Construction and Weston Aqueduct Supply Mains Section 36/W11 C/S 9-All Valve of 431,000.
3. **Waterworks Other** of \$594,000 – primarily due to an amended community repayment schedule approved by the Board after the submittal of the FY16 budget.
4. **Wastewater Treatment** of \$537,000 – for Scum Skimmer Replacement.

The overspending was offset by underspending on the following programs:

1. **Wastewater Other** of \$2.4 million – primarily due to less than anticipated community requests for grants and loans.
2. **Business and Operations Support** of \$1.4 million – mainly for lower than budgeted spending for Security Equipment of \$635,000 due to delay in award of monitoring equipment contract, MIS initiatives of \$414,000, and As-Needed Design Services of \$412,000.

3. **Wastewater Treatment** of \$1.9 million – mainly for Butterfly Valve Replacement Construction of \$584,000, Electrical Equipment Upgrade Construction of \$475,000, Clinton Digester Cleaning of \$400,000, Secondary Reactor Variable Frequency Drives of \$252,000, and other smaller items totaling approximately \$200,000.
4. **Drinking Water Quality Improvements** of \$1.4 million – mainly for Spot Pond Covered Storage of \$1.3 million due to timing of work.
5. **Waterworks Transmission** of \$817,000 – mainly due to the timing of Watershed land purchases of \$625,000 Long-Term Redundancy of \$146,000, and Metrowest Tunnel of \$119,000.
6. **Interception and Pumping** of \$687,000 – mainly due to delays in the Chelsea Screenhouse Upgrades of \$361,000, Chelsea Creek Upgrade Design of \$210,000, and some other smaller items.

### **Construction Fund Balance**

The construction fund balance was at \$51.6 million as end of September. Commercial Paper availability was at \$220 million to fund construction projects.

Attachment 1 – Variance Summary September 2015

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

ATTACHMENT 1

	September 2015 Year-to-Date					
	Period 3 YTD Budget	Period 3 YTD Actual	Period 3 YTD Variance	%	FY16 Approved	% Expended
	<b>EXPENSES</b>					
WAGES AND SALARIES	\$ 22,148,173	\$ 21,544,753	\$ (603,420)	-2.7%	\$ 99,363,168	21.7%
OVERTIME	1,046,239	1,070,713	24,474	2.3%	4,219,293	25.4%
FRINGE BENEFITS	4,792,208	4,785,357	(6,851)	-0.1%	19,326,756	24.8%
WORKERS' COMPENSATION	585,750	283,322	(302,428)	-51.6%	2,343,000	12.1%
CHEMICALS	2,776,615	2,783,555	6,940	0.2%	9,790,848	28.4%
ENERGY AND UTILITIES	4,603,669	4,352,157	(251,512)	-5.5%	23,164,822	18.8%
MAINTENANCE	5,868,543	5,509,668	(358,875)	-6.1%	28,698,772	19.2%
TRAINING AND MEETINGS	36,191	66,142	29,951	82.8%	413,714	16.0%
PROFESSIONAL SERVICES	1,430,024	1,434,545	4,521	0.3%	5,819,611	24.7%
OTHER MATERIALS	913,836	934,099	20,263	2.2%	6,164,589	15.2%
OTHER SERVICES	6,258,818	6,116,303	(142,515)	-2.3%	23,529,902	26.0%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 50,460,066</b>	<b>\$ 48,880,614</b>	<b>\$ (1,579,452)</b>	<b>-3.1%</b>	<b>\$ 222,834,475</b>	<b>21.9%</b>
INSURANCE	\$ 540,199	\$ 425,469	\$ (114,730)	-21.2%	\$ 2,160,797	19.7%
WATERSHED/PILOT	7,024,058	6,768,947	(255,111)	-3.6%	28,096,233	24.1%
BEC <sub>o</sub> PAYMENT	567,034	559,811	(7,223)	-1.3%	1,946,157	28.8%
MITIGATION	350,000	380,000	30,000	8.6%	1,400,000	27.1%
ADDITIONS TO RESERVES	(8,732)	(8,732)	-	0.0%	(34,927)	25.0%
RETIREMENT FUND	8,159,521	8,159,521	-	0.0%	8,159,521	100.0%
POST EMPLOYEE BENEFITS	-	-	-	---	5,224,848	0.0%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 16,632,080</b>	<b>\$ 16,285,016</b>	<b>\$ (347,064)</b>	<b>-2.1%</b>	<b>\$ 46,952,629</b>	<b>34.7%</b>
STATE REVOLVING FUND	\$ 19,108,254	\$ 19,108,254	\$ -	0.0%	\$ 81,876,277	23.3%
SENIOR DEBT	68,679,857	67,656,199	(1,023,658)	-1.5%	283,024,431	23.9%
CORD FUND	-	-	-	---	-	---
DEBT SERVICE ASSISTANCE	-	-	-	---	-	---
CURRENT REVENUE/CAPITAL	2,800,000	2,800,000	-	0.0%	11,200,000	25.0%
SUBORDINATE MWRA DEBT	12,129,876	12,129,876	-	0.0%	49,222,442	24.6%
LOCAL WATER PIPELINE CP	1,037,310	1,037,310	-	0.0%	4,149,240	25.0%
CAPITAL LEASE	804,265	804,265	-	0.0%	3,217,060	25.0%
VARIABLE DEBT	-	(3,778,151)	(3,778,151)	---	-	0.0%
BOND REDEMPTION SAVINGS	-	-	-	---	-	---
DEFEASANCE ACCOUNT	-	-	-	---	-	---
<b>TOTAL DEBT SERVICE</b>	<b>\$ 104,559,562</b>	<b>\$ 99,757,753</b>	<b>\$ (4,801,809)</b>	<b>-4.6%</b>	<b>\$ 432,689,450</b>	<b>23.1%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 171,651,708</b>	<b>\$ 164,923,383</b>	<b>\$ (6,728,326)</b>	<b>-3.9%</b>	<b>\$ 702,476,554</b>	<b>23.5%</b>
<b>REVENUE &amp; INCOME</b>						
RATE REVENUE	\$ 168,110,000	\$ 168,110,000	\$ -	0.0%	\$ 672,440,000	25.0%
OTHER USER CHARGES	2,217,735	2,261,052	43,317	2.0%	8,683,898	26.0%
OTHER REVENUE	6,581,497	6,735,840	154,343	2.3%	12,000,066	56.1%
RATE STABILIZATION	-	-	-	---	-	---
INVESTMENT INCOME	2,218,385	2,465,783	247,398	11.2%	9,352,590	26.4%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 179,127,617</b>	<b>\$ 179,572,675</b>	<b>\$ 445,058</b>	<b>0.2%</b>	<b>\$ 702,476,554</b>	<b>25.6%</b>

**ATTACHMENT 2  
Current Expense Variance Explanations**

Total MWRA	FY16 Budget YTD September	FY16 Actuals YTD September	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
<b>Direct Expenses</b>					
Wages & Salaries	22,148,173	21,544,753	(603,420)	-2.7%	Underspending is due to lower than budgeted positions and the salary mix differential between staff retiring at higher rates and new hires coming on board at lower rates. The average Full Time Equivalent's (FTEs) through September were 1,137, which was 23 positions lower than the 1,160 FTEs budgeted. Additionally, the Authority had 2 temporary employees.
Overtime	1,046,239	1,070,713	24,474	2.3%	Overspending mainly in Water Valve Maintenance to reconfigure system flows associated with providing Lynn water, responding to a Cambridge water main break, and start-up at Spot Pond.
Fringe Benefits	4,792,208	4,785,357	(6,851)	-0.1%	Lower than budget mainly due to Health Insurance of \$28,000 and Dental Insurance of \$10,000 due to lower headcount offset by overspending for Medicare of \$13,000 and Unemployment Insurance of \$10,000.
Worker's Compensation	585,750	283,322	(302,428)	-51.6%	Underspending due to lower medical expenses of \$158,000 and compensation payments of \$143,000. The lower spending in September is the result of lump sum settlements in prior periods which lower reserves. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.
Chemicals	2,776,615	2,783,555	6,941	0.2%	Higher year-to-date spending primarily due to higher than budgeted use of Hydrogen Peroxide of \$174,000 due to pretreatment being required due to elevated H2S levels due to low flows. This was offset by lower usage of Soda Ash of \$72,000 mainly due to timing of deliveries and slightly lower flows; Other Oxidizers of \$35,000 for lower need for H2S gas control on the Framingham Extension Sewer; Sodium Bisulfite of \$33,000; and Sodium Hypochlorite of \$30,000.
Utilities	4,603,669	4,352,157	(251,512)	-5.5%	Underspending due to lower Electricity of \$696,000 mainly at DITP for over accrual at the end of FY15 and lower commodity, transportation & distribution costs, and lower flows requiring less pumping. FOD was underspent by \$50,000 mainly due to the delay of completion of the new Spot Pond Pump Station and Covered Storage facilities. This underspending was offset by higher spending on Diesel of \$444k due to the early purchase of diesel at DITP to take advantage of low pricing. We purchased 294,000 gallons of diesel at \$1.57/gallon versus a budgeted price of \$2.75/gallon.

**ATTACHMENT 2  
Current Expense Variance Explanations**

Total MWRA	FY16 Budget YTD September	FY16 Actuals YTD September	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
Maintenance	5,868,543	5,509,668	(358,875)	-6.1%	Underspending for Services of \$780,000 due to some schedule shifts for some planned projects. Materials were overspent by \$421,000 due to the purchase of unbudgeted items including the interior air monitoring system at Nut Island.
Training & Meetings	36,191	66,142	29,951	82.8%	Higher spending primarily associated with timing of MIS training initiatives.
Professional Services	1,430,024	1,434,545	4,521	0.3%	Higher spending on Other of \$61,000 mainly for outside bond counsel services connected with reserve releases and defeasances offset by lower spending on Lab & Testing & Analysis of \$36,000 and Resident Inspection of \$17,000.
Other Materials	913,836	934,099	20,262	2.2%	Higher than budget mainly for Computer Hardware of \$87,000 and Lab and Testing Supplies of \$49,000 mainly due to receipt of equipment ordered in FY15 and received in quarter 1 of FY16; Vehicle Purchases of \$35,000 due to timing; Health & Safety of \$31,000 and Purchase Cards of \$16,000. The overspending is offset by lower Equipment and Furniture purchases of \$84,000; Work Clothes of \$27,000, and Other Materials of \$23,000 due to timing and Vehicle Expense of \$64,000 mostly due to lower fuel prices.
Other Services	6,258,818	6,116,303	(142,515)	-2.3%	Lower than budgeted spending for Pellet Processing of \$66,000 and Grit and Screenings of \$16,000 primarily due to lower quantities; Space Lease Rentals of \$32,000 primarily associated with the Chelsea facility lease; Other Rentals of \$24,000; Police Details of \$16,000 and Telephone of \$10,000. The underspending is offset by higher spending on Other Services of \$36,000 for Ward Street Headworks radio tower demolition.
<b>Total Direct Expenses</b>	<b>50,460,066</b>	<b>48,880,614</b>	<b>(1,579,452)</b>	<b>-3.1%</b>	

**ATTACHMENT 2  
Current Expense Variance Explanations**

Total MWRA	FY16 Budget YTD September	FY16 Actuals YTD September	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
<b>Indirect Expenses</b>					
Insurance	540,199	425,469	(114,730)	-21.2%	Lower Payments/Claims of \$99,000 and Premiums of \$16,000.
Watershed/PILOT	7,024,058	6,768,947	(255,111)	-3.6%	Underspending due to lower Reimbursement expenses of \$255k due to FY15 overaccrual.
HEEC Payment	567,034	559,811	(7,223)	-1.3%	Lower O&M charges.
Mitigation	350,000	380,000	30,000	8.6%	
Addition to Reserves	(8,732)	(8,732)	-	0.0%	
Pension Expense	8,159,521	8,159,521	-	0.0%	
Post Employee Benefits	-	-	-		
<b>Total Indirect Expenses</b>	<b>16,632,080</b>	<b>16,285,016</b>	<b>(347,064)</b>	<b>-2.1%</b>	
<b>Debt Service</b>					
Debt Service	104,559,562	99,757,753	(4,801,809)	-4.6%	\$3.8 million of the variance is due to the low short-term interest rates and \$1.0 million is the favorable impact of defeasances related to reserve releases.
Debt Service Assistance	-	-	-		
<b>Total Debt Service Expenses</b>	<b>104,559,562</b>	<b>99,757,753</b>	<b>(4,801,809)</b>	<b>-4.6%</b>	
<b>Total Expenses</b>					
<b>Total Expenses</b>	<b>171,651,708</b>	<b>164,923,383</b>	<b>(6,728,326)</b>	<b>-3.9%</b>	
<b>Revenue &amp; Income</b>					
Rate Revenue	168,110,000	168,110,000	-	0.0%	
Other User Charges	2,217,735	2,261,052	43,317	2.0%	
Other Revenue	6,581,497	6,735,840	154,343	2.3%	Higher non-rate revenue due to sale of surplus equipment of \$97,000; timing of Rutland Holden payments of \$20,000; receipt of a Massachusetts Emergency Management Agency grant of \$17,000; and other smaller items totaling \$70,000.
Rate Stabilization	-	-	-		
Investment Income	2,218,385	2,465,783	247,398	11.2%	Higher Investment Income due to higher than budgeted short-term rates offset by the effect of some investments being called earlier than projected.
<b>Total Revenue</b>	<b>179,127,617</b>	<b>179,572,675</b>	<b>445,058</b>	<b>0.2%</b>	
<b>Net Revenue in Excess of Expenses</b>	<b>7,475,909</b>	<b>14,649,290</b>	<b>7,173,384</b>		



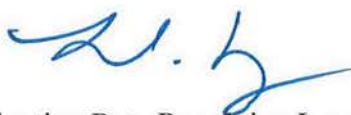
**ATTACHMENT 3**  
**Capital Improvement Program Variance Explanations**  
**(000's)**

	FY16 Budget YTD September	FY16 Actuals YTD September	YTD Actuals vs. Budget		Explanations
			\$	%	
Interception & Pumping (I&P)	\$1,215	\$528	(\$687)	-56.5%	Underspending mainly due to Chelsea Screenhouse Upgrades of \$361,000 due to timing, Chelsea Creek Upgrades Design/Construction Administration of \$210,000 due to design delays, and other smaller projects totaling \$223,000. Offset by Nut Island Headworks Electric, Grit & Screenings Conveyance Construction of \$107,000 due to contractor progress.
Treatment	\$7,758	\$6,372	(\$1,387)	-17.9%	Underspending on Butterfly Valve Replacement of \$584,000, Electrical Equipment Upgrades - Construction 4 of \$475,000, Clinton Digester Cleaning & Rehab of \$400,000, Secondary Reactor VFDs of \$252,000, North Main Pump Station VFD Replacement of \$197,000, As-Needed Design 7-2 of \$161,000, and Clarifier Rehab Phase 2 - Design of \$106,000 due to timing, and other smaller projects totaling \$141,000. Offset by overspending on Scum Skimmer Replacement of \$537,000 due to contractor progress and HVAC Equipment Replacement Design/Engineering Services During Construction of \$110,000 due to timing.
Residuals	\$0	\$0	\$0	-	
CSO	\$6,518	\$13,850	\$7,332	112.5%	Overspending on Cambridge Sewer Separation of \$7.7M due to water use during construction activities and updated cost estimates as a result of additional unforeseen conditions. Offset by MWR003 Gate & Siphon of \$398,000 due to timing.
Other Wastewater	\$2,308	(\$122)	(\$2,430)	-105.3%	Underspending on Infiltration and Inflow (I/I) due to community requests for grants and loans being less than budgeted.
<b>Total Wastewater</b>	<b>\$17,799</b>	<b>\$20,627</b>	<b>\$2,829</b>	<b>15.9%</b>	
Drinking Water Quality Improvements	\$2,594	\$1,230	(\$1,364)	-52.6%	Underspending due to timing of work and weather delays for Spot Pond Storage Facility of \$1.3M and Carroll Water Treatment Plant's Ultraviolet Disinfection - Design/Engineering Services During Construction/Resident Engineer Inspection of \$177,000 due to timing. Offset by overspending on Existing Facilities CP-7 of \$185,000 primarily due to timing.

**ATTACHMENT 3**  
**Capital Improvement Program Variance Explanations**  
**(000's)**

	FY16 Budget YTD September	FY16 Actuals YTD September	YTD Actuals vs. Budget		Explanations
			\$	%	
Transmission	\$1,197	\$380	(\$817)	-68.3%	Underspending for Watershed Land of \$625,000 due to the timing of land acquisitions, Long Term Redundancy of \$146,000 due to schedule change and alternatives analysis, and Hultman Interconnection - Final Design/Construction Administration of \$119,000 due to less than anticipated services.
Distribution & Pumping	\$4,299	\$5,230	\$931	21.7%	Overspending on Spot Pond Supply Mains Rehab of \$665,000 mainly for Section 4 Webster Avenue Bridge Pipe Rehabilitation - Construction and Weston Aqueduct Supply Mains Section 36/C/S9 - A11 Valve of \$431,000 due to contractor progress offset by NIH Redundancy & Storage of \$144,000.
Other Waterworks	\$554	\$1,149	\$594	107.2%	Overspending of \$594,000 for Local Water System Assistance Program of \$572,000 mainly due to an amended community repayment schedule approved by the Board after submittal of the FY16 budget.
<b>Total Waterworks</b>	<b>\$8,644</b>	<b>\$7,987</b>	<b>(\$656)</b>	<b>-7.6%</b>	
Business & Operations Support	\$2,317	\$889	(\$1,428)	-61.6%	Underspending on Security Equipment of \$635,000 due to delay in award of monitoring equipment contract, Capital Maintenance Planning & Development of \$412,000 due to lower than projected use of as-needed technical assistance, and MIS-related projects of \$348,000 due to timing of IT Strategic Plan implementation.
<b>Total MWRA</b>	<b>\$28,759</b>	<b>\$29,504</b>	<b>\$745</b>	<b>2.6%</b>	

## STAFF SUMMARY

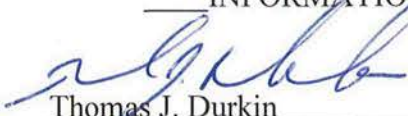
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 14, 2015  
**SUBJECT:** Approval of Letter of Credit and Direct Floating Rate Revolving Loan Agreements

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COMMITTEE: Administration, Finance & Audit

VOTE  
 INFORMATION

Matthew R. Horan, Treasurer *MHA*  
Sean R. Cordy, Financial Planner *SRK*  
Preparer/Title

  
Thomas J. Durkin  
Director of Finance

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### RECOMMENDATION:

To approve the recommendation of the Selection Committee to award a Letter of Credit to support a principal amount not-to-exceed \$150,000,000 to TD Bank N.A. and a Direct Floating Rate Revolving Loan in a principal amount not-to-exceed \$100,000,000 to Bank of America N.A. to replace the 1994 Tax-Exempt Commercial Paper Notes;

To adopt the Sixty-Ninth Supplemental Resolution authorizing the issuance of up to \$150,00,000 of Massachusetts Water Resources Authority Tax Exempt Commercial Paper Notes, Series 2015 and the supporting Issuance Resolution; and

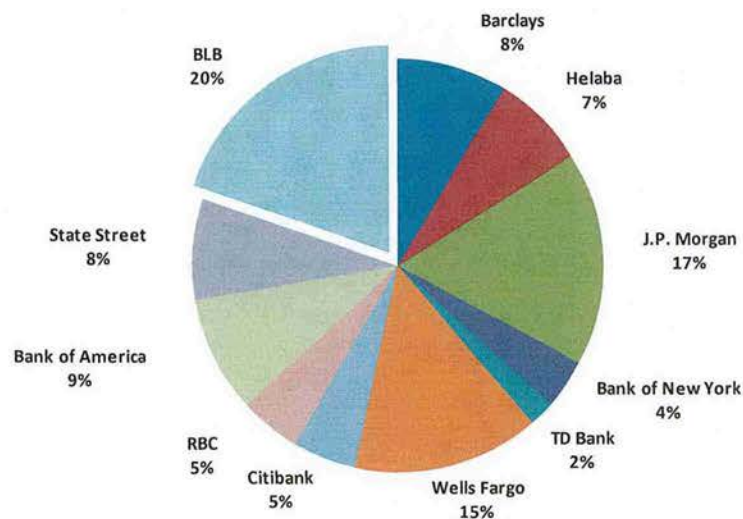
To adopt the Seventieth Supplemental Resolution authorizing the issuance of up to \$100,000,000 of Massachusetts Water Resources Authority Subordinated Tax Exempt Revolving Line of Credit, Series 2015.

### DISCUSSION:

MWRA currently maintains a \$350 million Tax-Exempt Commercial Paper Program (Commercial Paper) which consists of the 1994 Notes (\$250 million) and the 1999 Notes (\$100 million). Commercial paper is generally utilized to provide short-term funding for the capital program, to meet \$25 million of the Renewal and Replacement Reserve Fund requirement under the Amended and Restated General Bond Resolution and \$15 million of the Renewal and Rehabilitation Reserve requirement under Deer Island's NPDES Permit. Commercial paper is sold to investors by a remarketing agent with a maturity date from one to a maximum of 270 days from the date of issuance at an interest rate which is fixed for that period. When the Notes mature the holders are paid the principal due with either the proceeds of a remarketing to an investor or long-term bonds issued by MWRA. In the event that proceeds from a remarketing or long-term bonds are not available to pay investors, similar to MWRA's other variable rate debt, the holder is paid by a bank providing a credit facility (either a Letter of Credit or a Standby Bond Purchase Agreement).

Bayerische Landesbank (BLB) currently provides a Letter of Credit (LOC) on the \$250 million of the 1994 Commercial Paper Notes. BLB has informed MWRA that they made the business decision to no longer provide Letters of Credit and as a result would not be willing to extend the existing agreement which expires on November 30, 2015. At the time of issuance, the Letter of Credit becomes an integral component of the commercial paper structure and the Supplemental and Issuance Resolutions allow for the facility to be extended for the life of the program. At the end of each extension period, the Bank can opt out of providing the facility with prior notice to MWRA. Typically extending the existing facility at the prevailing market rates at the time of renewal is more cost effective because it avoids legal, rating agency, and bond placement fees associated with a new facility.

Over the last several years, MWRA has actively diversified its short-term/variable rate portfolio to limit exposure to any one provider, as well as the renewal risk caused by having a large par amount of any portion of the short-term/variable rate debt program reaching the end of their term in any one given period. This diversity is to ensure that potential disruptions caused by any one provider or changes in market conditions at the time of renewal are isolated to a smaller portion of the total portfolio. MWRA has \$250 million or 20% of its short-term/variable rate portfolio backed by BLB. The following graph shows a breakdown of the short-term variable rate debt portfolio by provider.



In response to the notice that BLB was not going to renew its facility, staff advertized the opportunity and issued a Request for Qualifications Statements/Proposals (RFQ/P) to firms interested in providing a new credit facility (either a Letter of Credit or Standby Bond Purchase Agreement) or providing a Direct Floating Rate Revolving Loan. One RFQ/P was used to evaluate pricing and other terms for the two categories since some of the providers would likely be able to offer both products.

Under the replacement of the credit facility option, the holders of the 1994 Notes would be paid from the proceeds of the new commercial paper sold by the remarketing agent. As it does now, the interest rate on the commercial paper would be set at the time of issuance for a period of one to a maximum of 270 days. The remarketing agent would then either reissue them or, if that was not possible, the credit facility bank would have to buy them at higher interest rates. MWRA received competitive proposals for Letters of Credit with terms ranging from one to five years. The pricing

for the Letter of Credits ranged from a low of 18.5 basis points for one year to a high of 75 basis points for five years. At the end of that period, MWRA would either extend the existing Letter of Credit or procure a new firm to provide those services.

With the Direct Floating Rate Revolving Loan, the existing 1994 Notes would be paid off with the proceeds of a loan with the successful proposer (most likely a bank). Under the terms of the agreement with the loan provider, MWRA would pay the institution a market floating rate tied to a percentage of the London Interbank Offered Rate (LIBOR) which is a taxable rate on the borrowed portion of the loan. Since banks often borrow their own funds based on the LIBOR index, many prefer to have the outstanding utilized portion of the Direct Floating Rate Revolving Loan based on LIBOR with an adjustment for the tax-exemption. For the unutilized portion of loan, which is the difference between the borrowed amount outstanding and the total authorization, the provider would charge a commitment fee. Under the terms of the revolving loan, MWRA would be able to borrow, repay and re-borrow during the term of the agreement. An advantage of this option is that any credit changes to the provider would not impact the interest rate MWRA paid on the bonds. MWRA received competitive proposals for Direct Floating Rate Revolving Loans with terms ranging from one to five. The pricing for the utilized fee component ranged from a low of 30 basis points for one year to a high of 85 basis points for five years. At the end of that period, MWRA would either extend the agreement with the existing provider or procure a new firm.

On September 18, 2015, MWRA received two proposals to provide Letters of Credit from State Street Bank and Trust Company, and TD Bank N.A. Three proposals for Direct Floating Rate Revolving Loans were received from Bank of America N.A., J.P. Morgan Chase Bank N.A., and TD Bank NA. A proposal was also received from Goldman Sachs which was judged to be non-responsive since it failed to offer a product which could be placed into one of the two categories.

The Selection Committee reviewed and ranked the proposals for the two categories described above. Below are the results of the Letter of Credit and Direct Floating Rate Loan rankings:

**Letter of Credits**

Rank	Firm	Total Points	Total Ranking Points
1	TD Bank	426	5
2	State Street Bank	348	10

**Direct Floating Rate Loans**

Rank	Firm	Total Points	Total Ranking Points
1	Bank of America	426	5
2	TD Bank	363	12
3	J.P. Morgan	308	13

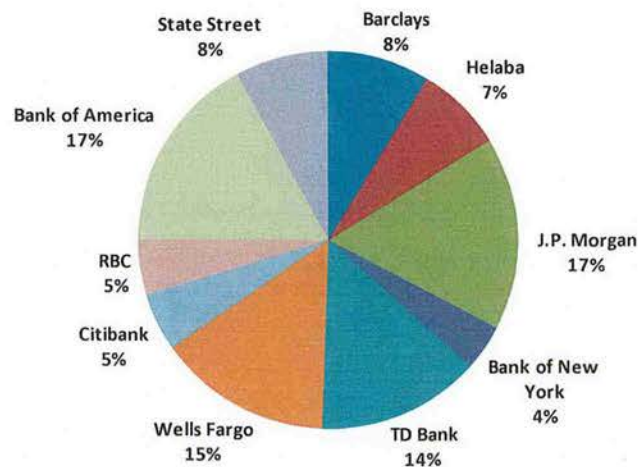
Based on the terms offered by the proposers and MWRA's continuing goal to diversify its exposure to any one provider or maturity date, staff are seeking approval to enter into agreements with the top ranked Letter of Credit and Direct Floating Rate Revolving Loan providers.

The following table details the allocation of the \$250 million of 1994 Commercial Paper Notes, the fees and the term of the agreements by entity.

Bank/Product	Allocated Amount	Unutilized Fee	Utilized Fee	Interest Rate Paid	Term	Annual Unutilized Fee
TD Bank N.A./ Letter of Credit	\$ 150,000,000	19.5 basis points	19.5 basis points	Market Rate	3 years	\$ 292,500
Bank of America N.A./ Direct Floating Loan	\$ 100,000,000	25 basis points	none	49 basis points + 70% of 1month LIBOR	3 years	\$ 250,000
	\$ 250,000,000					\$ 542,500

The terms offered by TD Bank N.A. for a Letter of Credit and Bank of America N.A. for a Direct Floating Rate Note Loan were favorable for MWRA. The new allocation of commercial paper will result in approximately \$220,000 per year in savings as compared to the current fee structure for the 1994 Notes. This reduction is a result of reduced unutilized and utilized fees and no remarketing costs (5 basis points) associated with the Direct Floating Rate Revolving Loan.

The following graph details the revised concentration of business partners in MWRA's variable rate portfolio after the proposed transactions are completed. As a result of the transaction no one provider will account for more than 17% of MWRA's total portfolio.



**BUDGET/FISCAL IMPACT:**

There are sufficient funds FY16 CEB to pay for the anticipated costs associated with the Letter of Credit and Direct Floating Rate Revolving Loan. Costs associated with the Commercial Paper program are paid out of the Construction Fund.

**MBE/WBE PARTICIPATION:**

No minimum MBE/WBE participation requirements were established due to the lack of subcontracting opportunities.

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** October 14, 2015  
**SUBJECT:** Proposed Changes to Pension Benefits



**COMMITTEE:** Administration, Finance & Audit

VOTE  
 INFORMATION



Thomas J. Durkin  
Director, Finance

*In recent years, amendments have been made to the Massachusetts public pension laws allowing local retirement systems to increase certain retirement benefits. These changes require the approval of both the MWRA Employees' Retirement System Board and the Board of Directors. The Retirement Board recently voted to increase three benefits. These changes would increase the minimum monthly benefit for surviving beneficiaries of members who die before retiring, increase the benefit for surviving spouses of accidental disability retirees, and increase the base upon which an annual cost of living adjustment is calculated.*

### RECOMMENDATION:

Pursuant to Section 29 and 30 of Chapter 176 of the Acts of 2011, to approve the MWRA Employees' Retirement Board's vote of September 24, 2015 to accept an increase to the minimum monthly allowance contained in G.L. c. 32, § 12(2)(d) for a member survivor allowance from \$250 to \$500.

Pursuant to Sections 27 and 28 of Chapter 131 of the Acts of 2010, to approve the MWRA Employees' Retirement Board's vote of September 24, 2015 to accept an increase to the annual allowance payable to surviving spouses of disability retirees under G.L. c. 32, § 101 from \$6,000 to \$9,000.

Pursuant to Section 19 of Chapter 188 of the Acts of 2010, to approve the MWRA Employees' Retirement Board's vote of September 24, 2015 to accept an increase in the maximum base amount on which the retiree cost-of-living adjustment is calculated from \$12,000 to \$13,000 effective July 1, 2016.

### DISCUSSION:

On September 24, 2015, the MWRA Employees' Retirement System Board (Retirement Board) voted to increase the level of three retirement benefits. The approval of both the Retirement

Board and the Board of Directors is required to adopt an increase to the retirement benefits discussed below. The Retirement Board has given notice of its actions and requested the Board's consideration for approval.

#### Section 12(2)(d) Minimum Survivor Allowance

Currently, Section 12(2)(d) of Chapter 32, "Option (d)," provides for a \$250 minimum monthly allowance to certain surviving beneficiaries of a member of a Massachusetts public retirement system who dies before retiring. As a local option, Sections 29 and 30 of Chapter 176 of the Acts of 2011 allows an increase to the minimum monthly benefit to \$500.

Segal Consulting, the Retirement System's actuary, has determined the cost of this increase, from \$250 to \$500 would not increase the Unfunded Actuarial Accrued Liability but would increase the fiscal year 2017 minimum required contribution scheduled to be \$3.1M by \$4,382.

#### Section 101 Benefit

"Option (c), Joint and Last Survivor Allowance" as described in Section 12 of Chapter 32 is a popular option for married retirees because it provides a pension benefit after their death to surviving spouses. For many years, surviving spouses of accidental disability retirees were unable to receive this surviving spouse benefit. In its place was an annual allowance established in 1964. In 1996, the law was amended to allow accidental disability retirees to elect Option (c). The change was not retroactive and still left people who had retired before November 7, 1996 with no surviving spouse benefit other than this annual allowance.

Currently, Section 101 of Chapter 32 provides a \$6,000 annual allowance. This annual allowance was increased to \$9,000 by Sections 27 and 28 of Chapter 131 of the Acts of 2010, and again to \$12,000 by Section 63 of Chapter 139 of the Acts of 2012. While taking effect immediately for the State and Teachers' retirement systems, it is a local option for other Massachusetts contributory retirement systems including MWRA.

The Retirement System currently has one survivor of an accidental disability retiree who is receiving this benefit. Segal Consulting has determined that increasing the benefit to \$9,000 as the Retirement Board has approved, would increase the Unfunded Actuarial Accrued Liability by \$32,812 and the fiscal year 2017 minimum required contribution scheduled to be \$3.1M by \$4,555.

#### Cost of Living (COLA) Base Increase

On July 27, 2010 the legislature approved the Municipal Relief Act – Chapter 188 of the Acts of 2010. This Act includes a provision (Sections 18 and 19) to increase the base upon which the COLA is calculated. Currently, Section 103 of Chapter 32 allows local retirement boards to grant cost of living increases each year to retirees up to the percentage reported each April 1 by the Public Employees Retirement Administration Commission (PERAC). The MWRA Retirement Board has typically granted 3% increases. These 3% increases are calculated on a statutory base of \$12,000. The Retirement Board has approved increasing the base to \$13,000.



Segal Consulting has determined that increasing the base from \$12,000 to \$13,000 would increase the Unfunded Actuarial Accrued Liability by \$2,280,332 and the fiscal year 2017 minimum required contribution scheduled to be \$3.1M by \$358,440.

#### Survey of Other Retirement Systems

Of the 104 retirement systems, forty-one retirement systems have increased the Section 12(2)(d) the monthly minimum allowance from \$250 to \$500. Fifty-seven systems have increased the section 101 disability retiree beneficiary allowance from \$6,000 to \$9,000 and 31 have gone to \$12,000. Sixty retirement systems have COLA bases ranging from \$13,000 to \$18,000. On November 16, 2011, effective January 1, 2012 the COLA base for retired state employees and teachers was increased to \$13,000.

#### **BUDGET/FISCAL IMPACT:**

There is no impact to FY16 Current Expense Budget. Any costs associated with approved increases to the pension benefits will be budgeted appropriately in future fiscal years.

#### **ATTACHMENT:**

A survey of local adoption of increased benefits

## Retirement System Survey of Benefit Increase Adoption

*Information provided by PERAC website  
as of August 28, 2015*

Retirement System	COLA Base Above \$12,000	Fiscal Year Eff. Date	12(2)(d) to \$500	101 to \$9,000	101 to \$12,000
Adams Retirement Board	\$14,000	2013	Y	Y	N
Amesbury Retirement Board	NC -\$12,000		N	N	N
Andover Retirement Board	NC -\$12,000		Y	Y	N
Arlington Retirement Board	\$15,000	2014	Y	Y	N
Attleboro Retirement Board	NC -\$12,000		Y	N	Y
Barnstable County Retirement Board	\$15,000	2014	Y	Y	Y
Belmont Retirement Board	NC -\$12,000		N	N	N
Berkshire County Retirement Board	\$14,000	2012	Y	N	Y
Beverly Retirement Board	NC -\$12,000		N	Y	N
Blue Hills Regional School Retirement Board	\$16,000	2012	N	N	N
Boston Retirement Board	\$13,000		N	N	Y
Braintree Retirement Board	NC -\$12,000		N	Y	N
Bristol County Retirement Board	\$17,000	2015	Y	Y	Y
Brockton Retirement Board	NC -\$12,000		Y	N	Y
Brookline Retirement Board	\$13,000	2012	N	N	N
Cambridge Retirement Board	\$14,000	2013	N	Y	N
Chelsea Retirement Board	NC -\$12,000		N	N	N
Chicopee Retirement Board	\$15,000	2014	N	Y	N
Clinton Retirement Board	\$14,000	2013	N	Y	N
Concord Retirement Board	NC -\$12,000		N	Y	N
Danvers Retirement Board	NC -\$12,000		N	Y	N
Dedham Retirement Board	\$15,000	2016	Y	Y	Y
Dukes County Contributory Retirement System	\$14,000	2014	Y	N	Y
Easthampton Retirement Board	\$14,000	2016	Y	Y	Y
Essex Regional Retirement Board	\$13,000	2013	Y	Y	Y
Everett Retirement Board	\$14,000	2013	Y	Y	N
Fairhaven Retirement Board	NC -\$12,000		N	N	N
Fall River Retirement Board	NC -\$12,000		Y	N	Y
Falmouth Retirement Board	NC -\$12,000		N	N	N
Fitchburg Retirement Board	NC -\$12,000		N	N	N
Framingham Retirement Board	NC -\$12,000		N	Y	N
Franklin Regional Retirement Board	\$16,000	2016	Y	Y	Y
Gardner Retirement Board	\$13,000	2013	Y	Y	N
Gloucester Retirement Board	\$14,000	2012	N	Y	N
Greater Lawrence Sanitary District Retirement Board	NC -\$12,000		N	N	N
Greenfield Retirement Board	\$14,000	2012	Y	Y	Y
Hampden County Retirement Board	\$18,000	2013	N	Y	N
Hampshire County Retirement Board	\$13,000	2014	Y	N	Y

Haverhill Retirement Board	NC -\$12,000		Y	Y	Y
Hingham Retirement Board	\$13,000	2016	N	Y	N
Holyoke Retirement Board	NC -\$12,000		N	N	N
Hull Retirement Board	NC -\$12,000		N	N	Y
Lawrence Retirement Board	NC -\$12,000		N	Y	N
Leominster Retirement Board	NC -\$12,000		N	N	N
Lexington Retirement Board	\$13,000	2016	Y	Y	Y
Lowell Retirement Board	\$15,000	2015	N	Y	N
Lynn Retirement Board	\$14,000	2014	Y	Y	N
Malden Retirement Board	\$14,000	2015	Y	Y	N
Marblehead Retirement Board	NC -\$12,000		N	N	N
Marlborough Retirement Board	NC -\$12,000		N	Y	N
Mass Housing Finance Agency Retirement Board	\$13,000	2013	Y	Y	Y
Mass Port Authority Retirement Board	\$13,000	2013	Y	N	N
Mass Water Resources Authority Retirement Board	NC -\$12,000		N	N	N
Maynard Retirement Board	\$15,000	2013	Y	N	N
Medford Retirement Board	\$16,000	2013	N	Y	Y
Melrose Retirement Board	NC -\$12,000		N	N	N
Methuen Retirement Board	\$14,000	2014	Y	Y	N
Middlesex County Retirement Board	\$14,000	2013	Y	Y	Y
Milford Retirement Board	\$13,000	2013	N	N	N
Milton Retirement Board	\$15,000	2012	Y	Y	Y
Minuteman Regional School District Retirement Board	\$13,000	2013	N	N	N
Montague Retirement Board	\$18,000	2012	Y	N	Y
Natick Retirement Board	NC -\$12,000		N	N	N
Needham Retirement Board	\$14,000	2016	Y	Y	N
New Bedford Retirement Board	NC -\$12,000		N	N	N
Newburyport Retirement Board	NC -\$12,000		N	N	N
Newton Retirement Board	NC -\$12,000		N	Y	N
Norfolk County Retirement Board	\$15,000	2012	Y	N	N
North Adams Retirement Board	\$13,000	2012	N	N	N
North Attleboro Retirement Board	NC -\$12,000		N	N	N
Northampton Retirement Board	\$13,000	2012	N	Y	N
Northbridge Retirement Board	\$14,000	2012	N	Y	N
Norwood Retirement Board	\$14,000	2013	N	Y	Y
Peabody Retirement Board	NC -\$12,000		N	N	N
Pittsfield Retirement Board	\$14,000	2012	Y	Y	Y
Plymouth Retirement Board	\$14,000	2012	Y	N	N
Plymouth County Retirement Board	\$13,000	2013	Y	Y	Y
Quincy Retirement Board	NC -\$12,000		N	N	N
Reading Retirement Board	NC -\$12,000		Y	Y	N
Revere Retirement Board	NC -\$12,000		N	N	N
Salem Retirement Board	NC -\$12,000		N	Y	N
Saugus Retirement Board	NC -\$12,000		N	N	N

Shrewsbury Retirement Board	NC -\$12,000		N	N	N
Somerville Retirement Board	NC -\$12,000		N	N	N
Southbridge Retirement Board	NC -\$12,000		N	Y	Y
Springfield Retirement Board	\$13,000	2014	N	Y	N
Stoneham Retirement Board	\$13,000	2012	N	Y	N
Swampscott Retirement Board	\$13,000	2012	Y	N	N
Taunton Retirement Board	\$14,000	2012	Y	Y	Y
Wakefield Retirement Board	NC -\$12,000		N	Y	N
Waltham Retirement Board	\$14,000	2012	N	Y	Y
Watertown Retirement Board	\$13,000	2016	Y	Y	Y
Webster Retirement Board	\$16,000	2013	N	N	N
Wellesley Retirement Board	\$15,000	2014	N	N	N
West Springfield Retirement Board	\$13,000	2013	N	N	N
Westfield Retirement Board	\$13,000	2014	Y	Y	N
Weymouth Retirement Board	NC -\$12,000		N	Y	N
Winchester Retirement Board	NC -\$12,000		N	N	N
Winthrop Retirement Board	NC -\$12,000		N	N	N
Woburn Retirement Board	NC -\$12,000		N	N	N
Worcester Retirement Board	\$13,000	2012	N	Y	N
Worcester Regional Retirement Board	\$14,000	2012	N	Y	N
Massachusetts State	\$13,000	2012	Y	Y	Y
Massachusetts State Teachers	\$13,000	2012	Y	Y	Y

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** October 14, 2015  
**SUBJECT:** Dental Insurance  
Delta Dental of Massachusetts  
Contract A591, Amendment 2



COMMITTEE: Administration, Finance & Audit

     INFORMATION

  X   VOTE

  
Karen Gay-Valente, Director of Human Resources  
Preparer/Title

  
Michele Gillen  
Director, Administration

**RECOMMENDATION:**

To approve Amendment 2 to Contract A591, with Delta Dental of Massachusetts, exercising the second option to renew, increasing the contract amount by \$355,000, from \$729,556 for a total not-to-exceed amount of \$1,084,556, and extending the term for twelve months from January 1, 2016 to December 31, 2016 for a total contract term of 36 months.

**DISCUSSION:**

The Authority has been providing dental insurance to all Non-Union employees since July 1, 1985. This benefit also covers a number of union employees who were accreted into collective bargaining units in 1994. The remaining MWRA union employees receive dental coverage through the Health and Welfare plans of their respective unions.

In November 2013, the Board of Directors approved a contract with Delta Dental of Massachusetts for \$355,556 to provide dental insurance to eligible employees for a period of twelve months (Calendar Year 2014) with further options to renew the contract for up to three additional twelve-month periods subject to Board approval.

This amendment is for the second extension covering Calendar Year 2016 and would maintain the level of coverage currently offered to eligible employees in the areas of diagnostic, preventive, basic and major restorative services as well as limited orthodontic coverage.

<b>Contract Summary</b>			
	Amount	Time	Dated
Original Contract	\$355,556	One Year	01/01/2014
Amendment 1	\$374,000	One Year	01/01/2015
Amendment 2	\$355,000	One Year	01/01/2016

**BUDGET/FISCAL IMPACT:**

This contract covers the second half of FY16 and the first half of FY17. The FY16 Current Expense Budget includes the cost of the dental insurance for eligible employees. The total cost of the plan is dependent upon the number of employees enrolled. The remaining cost of the dental insurance program will be budgeted for FY17.



# MASSACHUSETTS WATER RESOURCES AUTHORITY

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## **WASTEWATER POLICY & OVERSIGHT COMMITTEE MEETING**

*Chair:* J. Walsh  
*Vice-Chair:* P. Flanagan  
*Committee Members:*  
J. Carroll  
J. Foti  
A. Pappastergion  
H. Vitale

to be held on

Wednesday, October 14, 2015

Location: 100 First Avenue, 2nd Floor  
Charlestown Navy Yard  
Boston, MA 02129

Time: Immediately following AF&A Comm.

### **AGENDA**

#### **A. Information**

1. Industrial Pretreatment Annual Report to Environmental Protection Agency
2. 2014 Deer Island Outfall Monitoring Overview

#### **B. Approvals**

1. Approval of One New Member of the Wastewater Advisory Committee

#### **C. Contract Awards**

1. Supply and Delivery of Sodium Hypochlorite to Deer Island Treatment Plant: Borden & Remington Corp., Bid WRA-4091
2. Deer Island Treatment Plant Fire Alarm System Replacement Design and Engineering Services During Construction: RDK Engineers, Contract 6904
3. Thermal/Power Plant Fuel Oil System Upgrade, Deer Island Treatment Plant: J.F. White Contracting Co., Contract 7061A

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Wastewater Policy and Oversight Committee

September 16, 2015

A meeting of the Wastewater Policy and Oversight Committee was held on September 16, 2015 at the Authority headquarters in Charlestown. Chairman Walsh presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Cotter, Flanagan, Foti, Pappastergion, Pena and Vitale. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Dave Duest, Dave Kubiak, Rick Adams and Bonnie Hale. The meeting was called to order at 11:25 a.m.

**Information**

Update on the Deer Island Treatment Plant Co-Digestion Program

Staff gave a presentation on the history, the current status and recommendations for the next steps of this program. There was general discussion and question and answer. Joe Favaloro of the MWRA Advisory Board stated that it is important that MWRA make money on the program, and that a cautious approach is best.

**Approvals**

\*Memorandum of Understanding and Financial Assistance Agreement with the City of Cambridge for Implementation of CSO Control Projects, Amendment 12

The Committee recommended approval of Amendment 12 to the MOU (ref. agenda item B.1).

(Mr. Carroll left the meeting.)

**Contract Amendments/Change Orders**

North Main Pump Station Variable Frequency Drive and Synchronous Motor Replacement, DITP: J.F. White Contracting Co., Contract 6903, Change Order 11


The Committee recommended approval of Change Order 11 (ref. agenda item C.1).

The meeting adjourned at 12:05 p.m.

\* Approved as recommended at September 16, 2015 Board of Directors meeting.



## STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 14, 2015  
**SUBJECT:** MWRA Industrial Waste Report #31: Industrial Pretreatment Program Annual Report to EPA for FY15

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COMMITTEE: Wastewater Policy & Oversight

X  INFORMATION  
  VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer  
John A. Riccio, Director, TRAC  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

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### RECOMMENDATION:

For information only. MWRA is required by its NPDES Permits and EPA regulations (40 CFR 403.12(i)) to submit an annual report to EPA each year that describes the activities and accomplishments of MWRA's Industrial Pretreatment Program. Staff will be submitting the FY15 Annual Report (Industrial Waste Report #31) to EPA on or before October 31, 2015, the required submittal deadline. This staff summary discusses some of the highlights from the report. A draft copy of the report will be available in the Board lounge.

### DISCUSSION:

Industrial Waste Report #31 documents MWRA's efforts to control current permitted sewer users during FY15. MWRA's Toxic Reduction and Control (TRAC) section operates the Industrial Pretreatment Program to control the level of toxic substances discharged into the sanitary sewer system from commercial and industrial sources. Through permits, inspections, sampling, and enforcement, the program keeps excessive levels of toxics out of the sanitary sewer system to: protect worker health and safety; protect municipal and MWRA infrastructure; prevent interference at the Deer Island and Clinton Wastewater Treatment Plants; prevent the pass-through of pollutants into receiving waters; and enable MWRA to beneficially reuse its residuals for the production of fertilizer.

Staff estimate that approximately 3% of the total flow to the treatment plants comes from permitted facilities, but this flow represents a significantly higher proportion of toxics discharged to the system. TRAC currently oversees approximately 1,230 permitted sewer users. There were 208 facilities that met MWRA's definition of Significant Industrial User (SIU) during FY15. SIUs require substantial oversight due to the nature of the pollutants they discharge and/or the volume of their flows. Some of the highlights included in the report are described in the following pages.

## Significant Industrial Users

As mentioned above, there were 208 industries designated as Significant Industrial Users in MWRA's sewer service areas during FY15 (an SIU is a sewer user subject to Federal Categorical standards such as metal plater, or has a flow above 25,000 gallons per day, or has reasonable potential to violate MWRA's regulations). By the end of FY15, the number of SIUs in the District dropped to 204. The number of SIUs can vary during the year as a result of companies going out of business, a change in their pretreatment process, or a new company being added. TRAC met EPA's requirements for inspections and sampling in FY15, inspecting all of the 208 SIUs and sampling 179 SIUs. In FY15, 29 SIUs were not sampled because they did not discharge during the year<sup>1</sup>, were re-categorized as non-SIUs before they could be sampled, or ceased operations early in the fiscal year.



TRAC staff sampling a Framingham manhole for a special sulfide project

EPA requires TRAC to issue permits to 90% of MWRA's SIUs within 120 days of the industries' current permit expiration dates, or MWRA's receipt of a Sewer Use Discharge Permit Application, and 100% within 180 days. TRAC issued 92% of SIU permits within 120 days and 96% of permits within 180 days. A small number of SIU permits were issued beyond 180 days due to the time necessary to acquire and consider information received from permittees to correctly permit facilities that made modifications. Facilities remain covered by their existing permits while their renewal permits are pending. There are typically a few permits every year that are not renewed within required time frames due to these timing issues.

This year, the total number of SIUs in Significant Noncompliance<sup>2</sup> was 31, which was lower than the 33 in FY14. MWRA continues to hold annual educational meetings with SIUs to review and reinforce methods for staying in compliance. The FY15 meetings were held at MWRA's Chelsea Facility in May 2015. Attendees heard presentations on topics of interest in toxic reduction and control from MWRA staff, EPA and the Massachusetts Office of Technical Assistance (OTA). Credits for attending the seminar were DEP-approved for Operator License training. A total of 80 people from 60 of MWRA's SIUs attended the meetings offered on three different dates.

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<sup>1</sup> Non-discharging facilities include those that operate a federally-regulated process with a discharge that is either hauled or evaporated on site. Such facilities are permitted by MWRA as Category 4 SIUs. MWRA annually inspects these facilities but does not sample wastewater that is not discharged to its sewer system. There were other SIUs that did not discharge while undergoing renovations.

<sup>2</sup> MWRA is required to annually update EPA regarding Significant Industrial Users that meet EPA's definition of Significant Noncompliance. Each industrial user is evaluated for Significant Noncompliance four times during the year. MWRA evaluates each SIU based on discharge and reporting requirements.

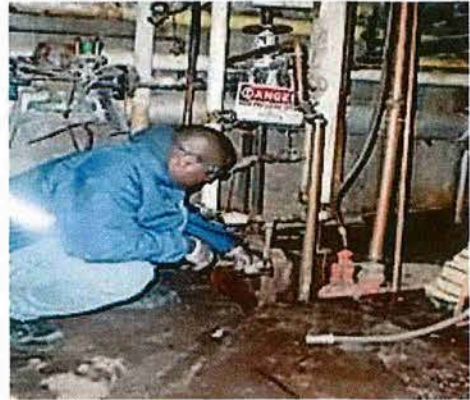
## Inspections and Monitoring Programs

In addition to paying close attention to the SIUs, TRAC staff are responsible for permitting, inspecting and monitoring a variety of other types of facilities to minimize the discharge of toxics to the sewer and assist other MWRA programs. In FY15, TRAC staff conducted an additional 559 industrial/commercial facility inspections of other regulated industries, 228 inspections associated with the septage program, including inspections of haulers and septage receiving sites, and 620 inspections of oil/water separators. There are 11 septage receiving sites and more than 4,500 oil/water separators within MWRA's district.

TRAC's monitoring staff conducted an additional 1,528 sampling events to characterize wastewater flow from non-SIU permitted facilities, to support MWRA's NPDES permits and other MWRA projects, and to evaluate discharges to the sewer in response to emergencies.

### Enforcement Program

In FY15, TRAC issued a total of 206 early enforcement actions (Notices of Violations and Traps Warning Letters) to industrial and commercial facilities (compared to 217 in FY14), and 47 higher-level enforcement actions (Orders and Penalty Assessment Notices) issued in response to a variety of persistent discharge and reporting violations, compared to 29 in FY14.



Sampling the industrial wastewater at a facility to ensure permit compliance

TRAC assessed a total of \$166,125.00 in penalties in FY15 against permitted sewer users (compared to \$64,250.00 assessed in FY14); five SIUs were assessed penalties totaling \$161,950.00 while seven non-SIUs were assessed penalties totaling \$4,175.00. MWRA collected a total of \$91,675.00<sup>3</sup> (compared to \$120,458.00 collected in FY14). The amount of penalties assessed and collected can vary significantly from year to year as a result of the timing of the penalty issuance, assessment of the penalty, negotiations and collection.

### Program Cost Recovery

MWRA's Incentive and Other Charges Program continues to recover a substantial portion of MWRA's costs of inspecting, monitoring, and permitting industrial sewer users. The total adjusted amount billed under the program in FY15 was \$2,111,972, a slight decrease from \$2,116,952 in FY14. As of September 2015, collections for FY15 bills were at \$2,087,679 (compared to \$1,992,633 in FY14), approximately a 99% recovery of the adjusted amount invoiced.

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<sup>3</sup> Only a portion of the penalties assessed in FY15 were actually settled and collected during FY15. Some amounts collected are from penalties or settlements from prior years, while other amounts are still outstanding due to ongoing administrative enforcement procedures and settlement discussions.

## FY15 and 16 Initiatives

During the fall and winter of FY15, TRAC staff worked closely with other MWRA staff and state public health officials to address potential risks from the Ebola virus. Disposal of Ebola-contaminated waste poses a potential risk to municipal and MWRA sewer workers who can be in contact with raw wastewater within minutes of sewer discharge from a hospital. Six hospitals in Massachusetts were designated as Ebola treatment sites, five in MWRA's sewer service area and regulated under the pretreatment program. MWRA amended the Sewer Use Discharge permits for those facilities to include specific requirements, including immediate notification, identification of the discharge connection(s) to the sanitary sewer, a strong preference that waste be contained and removed as a biological hazard, and, in the event containment is not possible, disinfection of any bodily fluids before discharge. MWRA also conducted training, developed internal procedures, and purchased and distributed enhanced safety equipment to staff that might encounter raw wastewater in their normal activities.

Staff expect to complete the required regulatory review of the local limits applicable to the facilities in the Clinton service area and will undertake a similar review for the Deer Island service area when final permits are issued by EPA. These reviews will be required under the National Pollution Discharge Elimination System (NPDES) permit renewals for the Clinton and Deer Island Wastewater Treatment Plants.

EPA issued a draft proposal to establish a National Categorical Standard for dentists. TRAC staff reviewed and commented on the proposal. EPA has indicated that it will publish the final rule during calendar year 2016. Depending upon the details of the final rule, there is a potential that MWRA may be required to issue permits to approximately 1,000 dental facilities in MWRA's sewer districts. Staff will continue to closely follow developments around this rule, which may require additional resources as well as changes to MWRA regulations when it is promulgated. Staff will return to the Board with proposed changes if necessary.


Staff will also continue to address upgrades and improvements to its pretreatment information management system (PIMS) with our consultant. These upgrades include EPA's required electronic reporting rule.

### **BUDGET/FISCAL IMPACT:**

TRAC's FY15 Current Expense Budget was \$3.8 million, approximately 56% (\$2,116,952) of which was recovered through permit charges and penalty collections, compared to 57% in FY14.

TRAC FY15 charges remain at the FY12 rates (after three years of Board-approved 4.5% across-the-board increases in each of Fiscal Years 2010, 2011, and 2012). Charges will remain at the 2012 rates until modified by changes to MWRA's regulations.

**STAFF SUMMARY**

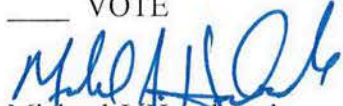
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 14, 2015  
**SUBJECT:** 2014 Deer Island Outfall Monitoring Overview

COMMITTEE: Wastewater Policy & Oversight

X INFORMATION

     VOTE

Carolyn M. Fiore, Deputy COO, PP&P  
Kenneth E. Keay, Program Manager  
Betsy Reilley, Ph.D., Director, Environmental Quality  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

*The Outfall Monitoring Overview is an annual report that summarizes the results of MWRA's monitoring of the environmental effects of the effluent discharges from the Deer Island Treatment Plant outfall. MWRA monitors the effluent, as well as the water, sediment, and health of fish and shellfish in Massachusetts and Cape Cod Bays. 2014 was the fourth year that monitoring was conducted according to a more streamlined plan. For the fourteenth year of outfall monitoring no adverse impacts in the discharge area were found in 2014.*

*Under its current National Pollutant Discharge Elimination System (NPDES) permit for Deer Island, MWRA must submit this report to federal and state regulatory agencies by November 15. This staff summary provides the Board with the highlights of MWRA's Outfall Monitoring Overview for calendar year 2014. It takes approximately a year for MWRA's consultants to compile and analyze all of the data from the previous year's outfall monitoring, and finalize the report.*

**RECOMMENDATION:**

For information only.

**DISCUSSION:**

Monitoring the environment around MWRA's Massachusetts Bay outfall is a requirement in Deer Island's NPDES permit. Key monitoring results are compared to 96 thresholds contained in MWRA's Contingency Plan.<sup>1</sup> Required monitoring includes measurements of the Deer Island Treatment Plant's effluent quality, and environmental measurements of water, sediments, and fish and shellfish. Other studies include modeling water quality and continuous monitoring of water quality using instruments on two buoys.

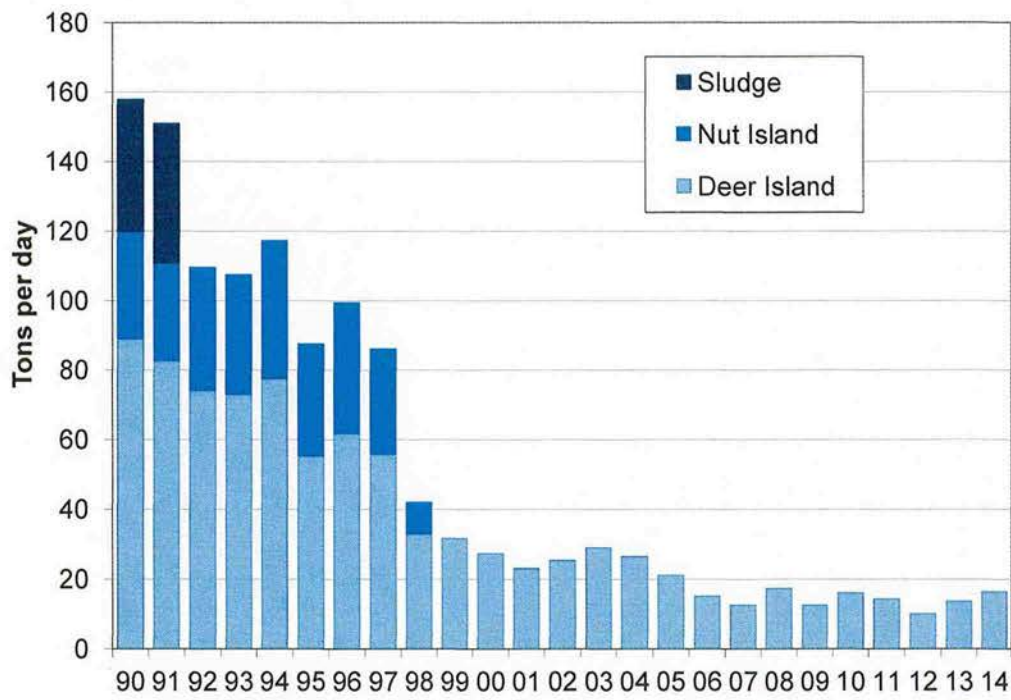
<sup>1</sup> The Contingency Plan is a requirement of MWRA's NPDES discharge permit for the Deer Island Treatment Plant. It contains a series of more than 20 effluent thresholds and more than 70 numeric thresholds (for example, annual average chlorophyll levels near the outfall) calculated from MWRA's environmental monitoring data. An exceedance of a threshold requires rapid notification of EPA, DEP, the Science Advisory Panel, and the public.

MWRA has been monitoring Boston Harbor, Massachusetts Bay, Cape Cod Bay and the outfall area since the early 1990s, and discharge monitoring began in 2000 when the outfall came on-line. One way potential effects are evaluated is to compare results collected after outfall start-up to results collected before the outfall went on-line (baseline conditions).

2014 was the fourteenth year of monitoring since the outfall came on-line and was yet another year with no adverse effects from the discharge in the areas monitored. Meanwhile, Boston Harbor continues to see substantial improvements.

### Summary of Effluent Quality Monitoring

- Deer Island Treatment Plant earned a Platinum 8 Peak Performance Award for 2014 from the National Association of Clean Water Agencies for eight years of 100% permit compliance;
- 2014 was a relatively average rainfall year; mean effluent flow from Deer Island in 2014 was slightly higher than in 2012 and 2013, which were extremely dry years;
- Virtually all flow (98.7%) received full primary and secondary treatment;
- Total Suspended Solids loads from effluent were 16.3 tons/day, about 10% of the solids load discharged in the early 1990s (see figure below);



Annual solids discharges. Solids discharges remained extremely low during 2014.

- Metals loads in Deer Island’s effluent also remained low in 2014; and
- Sustained low solids and metals loadings in the Deer Island effluent are mainly due to treatment process improvements in 2005 made possible by the ability to pump sludge to the Pelletizing Plant (completion of the Braintree-Weymouth Tunnel), and record low flows.

## Summary of Outfall Monitoring Plan Results

2014 Monitoring results from the areas shown in the diagram to the right found that:

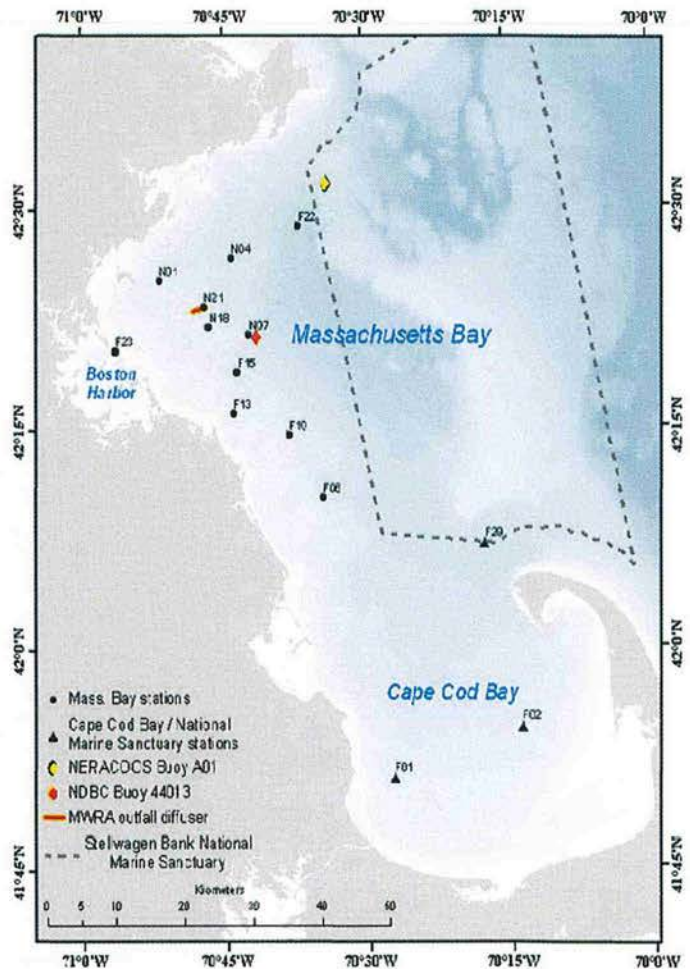
- No adverse impacts of the outfall discharge on water quality were identified in Massachusetts or Cape Cod Bays;
- Plankton communities remain diverse and normal;
- Flounder liver disease remains low;
- The bottom animal community is healthy and diverse; and
- Waters and sediments located in the Stellwagen Bank National Marine Sanctuary are unchanged since the outfall went on-line.

### *Water Quality Monitoring*

Monitoring in the water column focuses on the potential impact of nitrogen discharged by the outfall because nitrogen is not removed during treatment. The monitoring was designed to address concerns about whether nitrogen could increase blooms of harmful algal species, change the types or amount of plankton (adversely impacting the food web), or whether excess algal growth could decrease the amount of oxygen in the water.

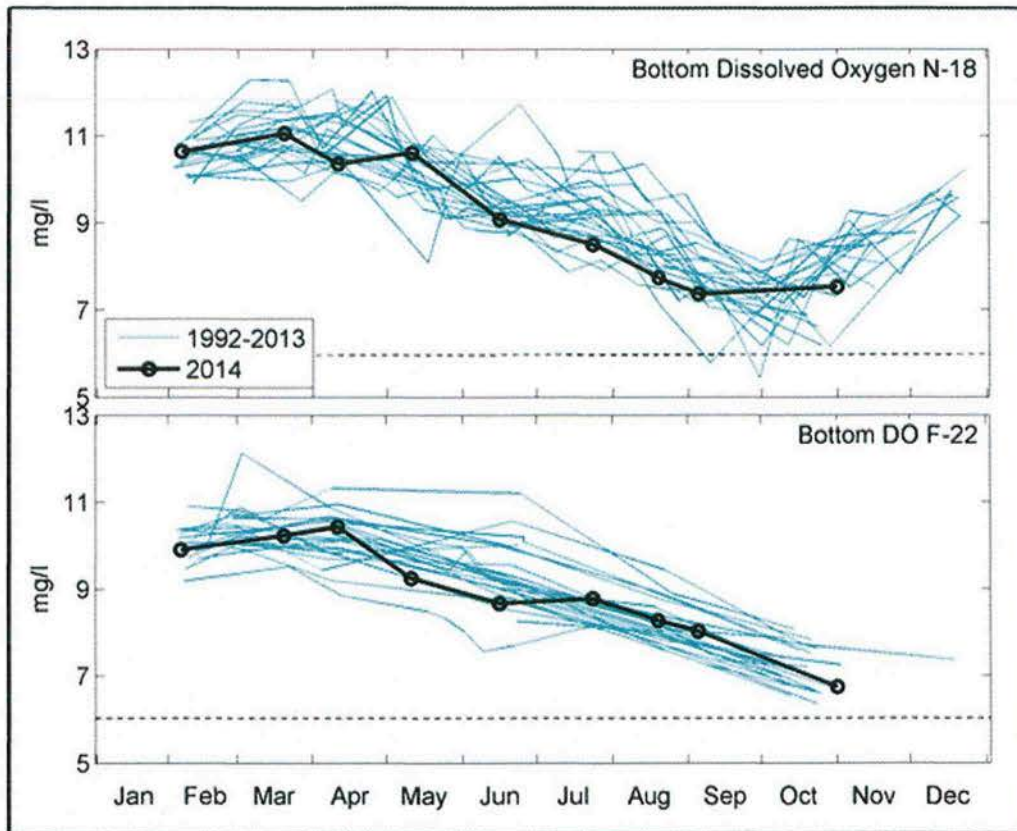


Collecting a plankton sample in Mass. Bay



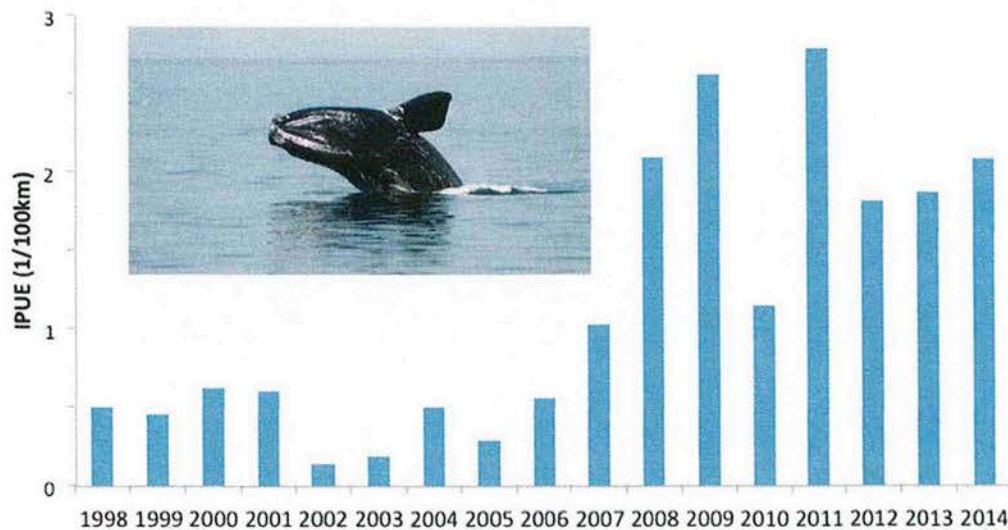
Locations of MWRA's water quality monitoring stations

In 2014, plankton communities in the bays were normal, with no red tide or large phytoplankton blooms observed in many years. However, cold weather in late winter delayed spring growth by several weeks. There was a small bloom in 2014 of a nuisance alga. The delayed growth meant this bloom peaked in May, when the species is normally absent, causing a Contingency Plan threshold exceedance, with no evidence the bloom was unrelated to the outfall discharge. Dissolved oxygen levels in the water were healthy, and by the end of the growing season in October were close to the long-term average (See figure next page).



Dissolved oxygen (DO) in 2014 (black line) in the vicinity of MWRA's outfall (station N18) and in Stellwagen Basin (F22), compared to data since 1992 (blue lines). Dashed lines show the Mass. state standard that DO not go below 6 mg/l unless caused by natural conditions, which happens some years near the outfall. Sampling now ends in October; under the old Monitoring Plan it continued through December.

The Provincetown Center for Coastal Studies is collaborating with MWRA to monitor nutrients and plankton in Cape Cod Bay. The Center's data showed that plankton conditions in Cape Cod Bay were favorable for right whale feeding in winter-spring 2014, and right whale sightings were high (See figure below).



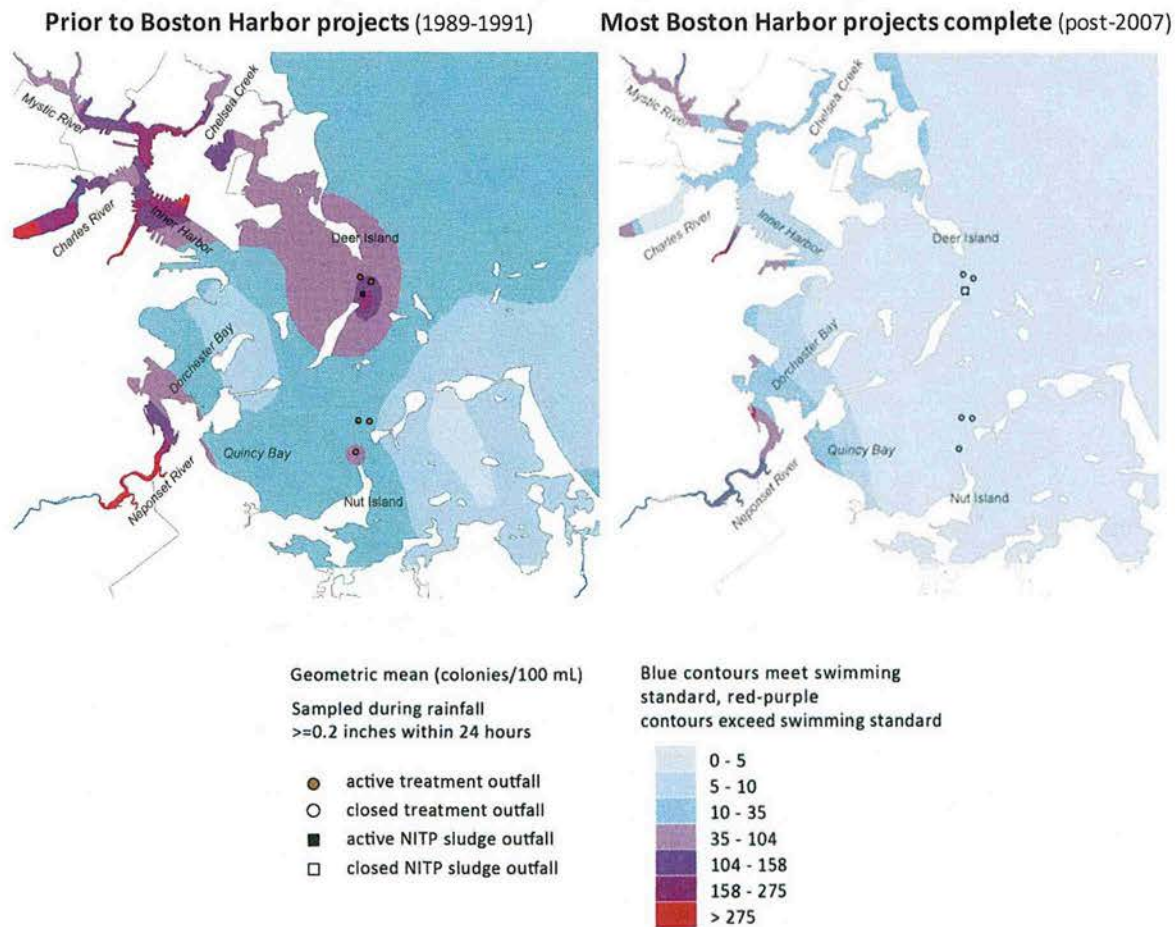
Right Whale sightings in Cape Cod Bay, 1998-2014. Figure from the Center for Coastal studies. IPUE = Individuals Observed per Unit Effort (100 km of track during an aerial survey).



*Bacterial water quality improvements in Boston Harbor*

MWRA has been monitoring bacterial water quality in Boston Harbor since the late 1980s. At the time, inadequate treatment and an aging infrastructure led to widespread violations of bacterial water quality standards in the Harbor and its tributaries during wet weather (figure below, left panel). Since 2007, when the Deer Island Treatment Plant and outfall were operational and most CSO related projects were complete, water quality in most of Boston Harbor and its tributaries meets the standards, even in wet weather (figure below, right panel). Remaining areas where wet weather exceedances occur are smaller and the exceedances much less severe than in the past.

These improvements have not come at the cost of water quality near MWRA's outfall in Massachusetts Bay. MWRA conducts monitoring around the outfall under an MOU with the Massachusetts Division of Marine Fisheries. These results document that since discharge began in 2000, water quality over MWRA's outfall always meets water quality standards, even in wet weather.



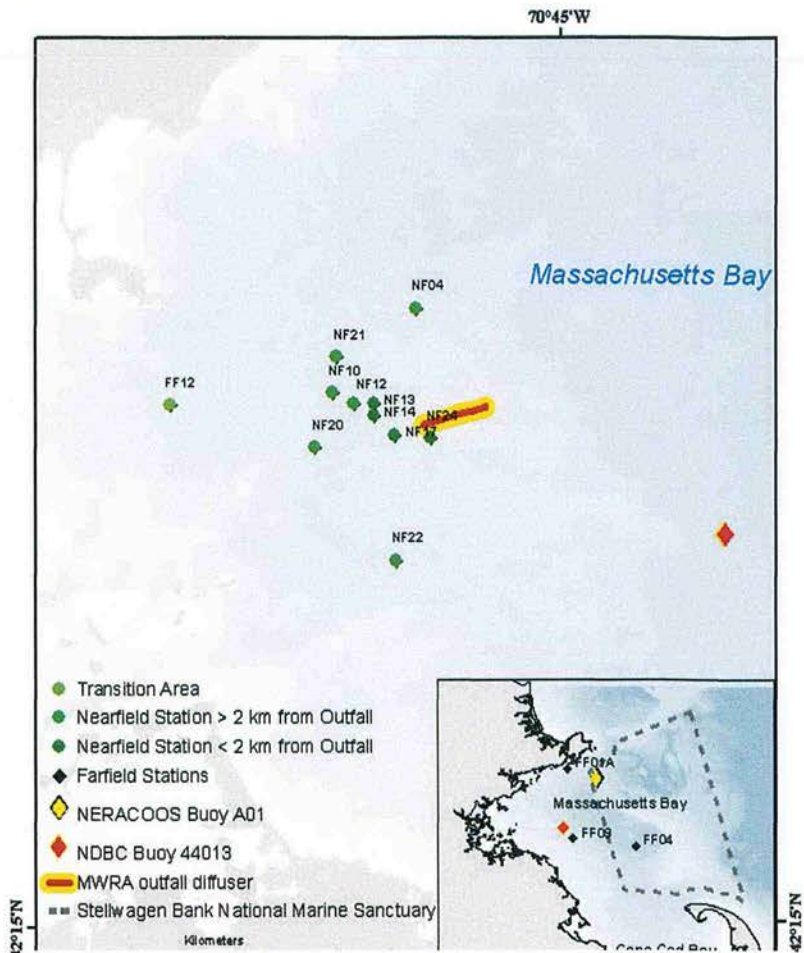
**Bacterial water quality in Boston Harbor 1989-91 and after 2007. Contours are based on wet weather geometric means of the bacterial water quality indicator, *Enterococcus***

*Monitoring Sediments near the Outfall*

Sea-floor habitat (the benthos) is a major component of a healthy marine ecosystem and is of particular interest in studies of pollutant effects because contaminants ultimately end up on the bottom. MWRA's sea floor monitoring assesses the health of animal communities and concentrations of contaminants in sediments. Studies of the animal communities living in mud found healthy, diverse groups of animals (worms, mollusks, crustaceans) normal to New England.

Long term, the abundance and diversity of animals at stations near the outfall (the nearfield) and at reference sites distant from the outfall appear to follow a cyclical pattern that is likely to be driven by large-scale climatic factors and ecological interactions within the benthos.

In 2014, for the fifth consecutive year, there was a Contingency Plan threshold exceedance for the benthic community sampled in the nearfield; two metrics showed the community was more diverse than the threshold. In September 2014, EPA's Outfall Monitoring Science Advisory Panel reviewed the exceedances through 2013. The Science Panel agreed with MWRA's evaluation that this was a normal fluctuation, not an adverse effect, and not caused by the outfall. Also, increased diversity is not normally considered an impact of concern, but these sediment thresholds were established to detect substantial changes from baseline conditions, either increases or decreases. The patterns seen in all five years (2010 to 2015) were similar, and regulators determined the 2014 exceedance did not require Science Panel Review.

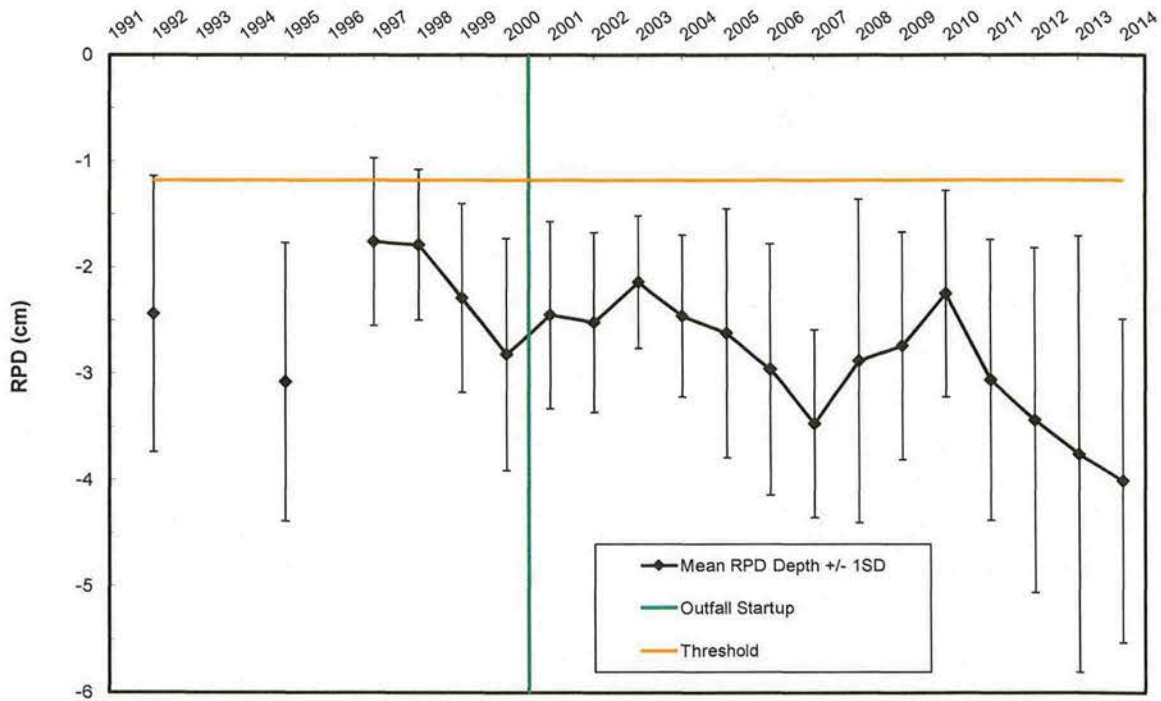


**Locations of MWRA's stations for monitoring the animal communities that live in bottom sediments in Massachusetts Bay**



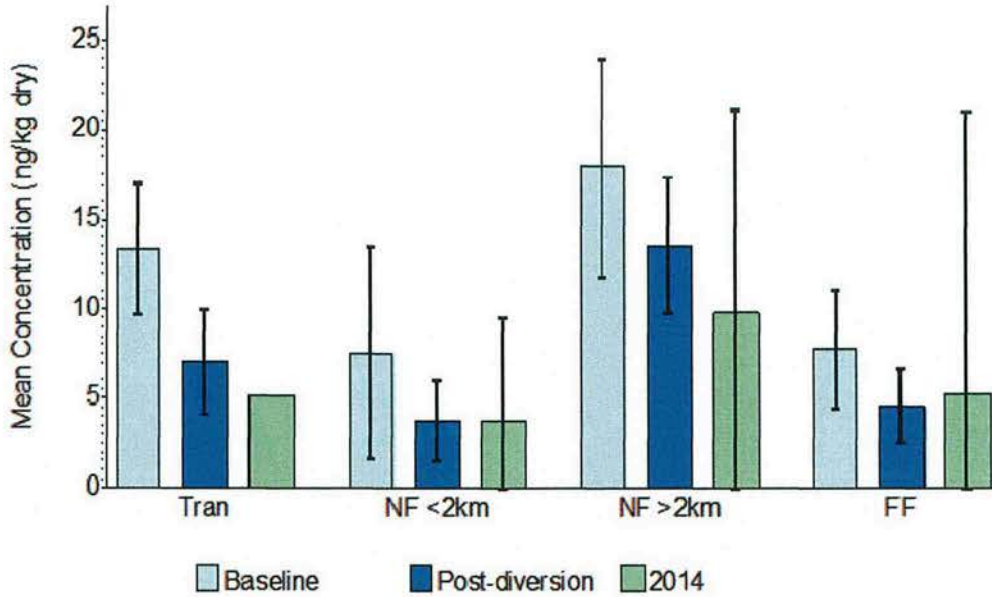
Collecting cross-section photos of the sea-floor to determine depth of oxygenation

Another indication that the discharge is having no effect on the sediment communities in the nearfield is that the depth of oxidized sediments in 2014 was the deepest yet measured. Healthy benthic communities mix oxygenated water deep into sediments, while this irrigation is much slower in communities stressed by pollution. In stressed communities, bacterial activity in the sediments outpaces mixing with oxygenated waters, and the depth where darker, anoxic sediments are found approaches the sediment surface (see figure on the following page).



Annual average depth of oxygenated sediments (Mean RPD) in nearfield sediments, 1992-2014. The orange line is the Contingency Plan threshold, set at one-half the average depth observed during baseline sampling. RPD = Redox Potential Discontinuity, the depth at which sediments change from oxic (oxygen present) to anoxic (no oxygen present).

Measurements of priority pollutant contaminants in sediments provide another strong indication that the discharge is having no effect on sediments in the vicinity of the outfall. Sampling is conducted every third year, including 2014. Concentrations of most contaminants in Massachusetts Bay sediments, for example PCBs, are remaining stable or are decreasing, even in sediments closest to the discharge (See figure below).



Mean PCB concentration by region, during the baseline, 2001-2012 (“Post-diversion”), and 2014. (Tran = transition area, stations located between Boston Harbor and the outfall; NF<2km = nearfield stations located within 2 km of the outfall diffusers; NF>2km = nearfield stations located further than 2 km from the diffusers; FF = farfield stations offshore from the outfall.)

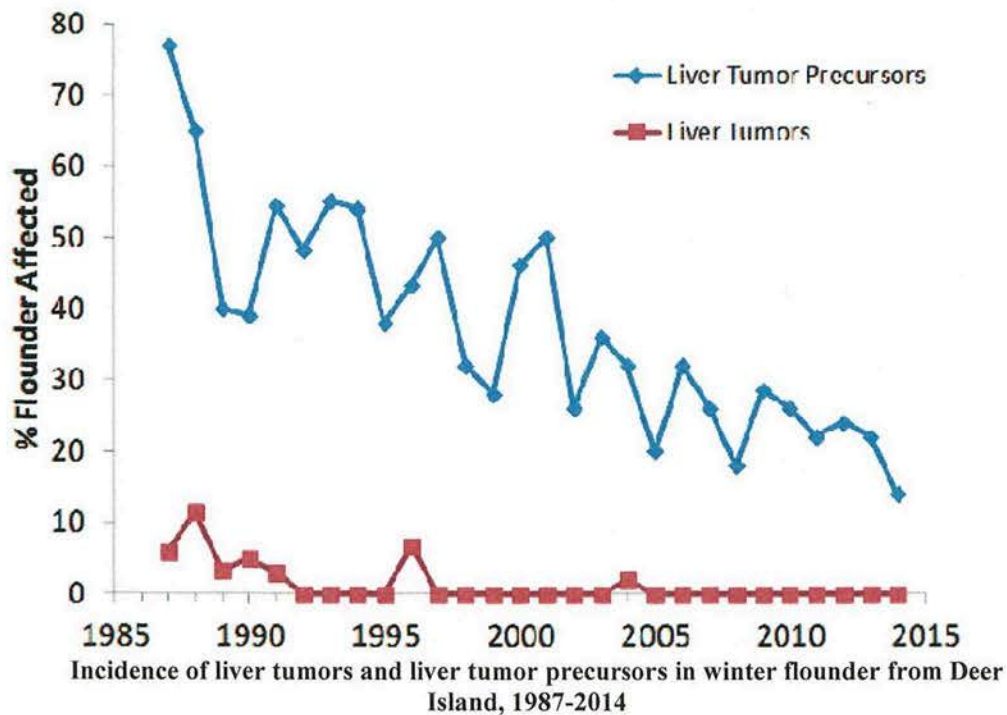
Every third year, including 2014, MWRA monitors rocky habitats in western Mass Bay near the outfall using a remotely operated vehicle. Monitoring through 2014 documented relative stability in the communities, without indications of substantial outfall impact (See figure below).



Lush growth in 2014 on the cap of Riser #2, at the northeast end of the Mass Bay outfall

## Flounder Monitoring

Because flounder live in close contact with the bottom sediments, their health, especially rates of liver disease, is an indication of the effects of contaminants in the sea floor. During the 1970s and 1980s, pollutant-related external abnormalities (for example, fin rot) and liver disease were common in winter flounder taken from Boston Harbor. Studies by the National Marine Fisheries Service in 1984 and 1985 found that flounder from Deer Island Flats had a variety of cancerous tumors and pre-cancerous conditions. Routine sampling and analysis for liver disease in fish from Deer Island Flats began in 1987 and found that more than half the fish had pre-cancerous liver conditions. That sampling program, adopted by MWRA, has continued, documenting substantial declines in tumors and tumor precursors as the flounder population recovered (See figure below). Liver tumors were present in 12% of the flounder caught in 1988 but have not been seen since 2004. Incidence of the most common tumor precursor has dropped by more than half.



### Outfall monitoring for flounder health

The presence of diseased fish in Boston Harbor in the 1980s led to concerns that offshore fish would be impacted once the outfall began discharging. Flounder monitoring has been a part of MWRA's Ambient Monitoring Program since 1991. In addition to Boston Harbor (discussed above), flounder from Cape Cod Bay, Nantasket Beach, and the outfall site are tested each year. Liver disease continued to be low at all sites, and there were no liver tumors. Skin ulcers, which had been pronounced in 2004, and reappeared in flounder caught in 2011, were quite low in 2014. The cause of these lesions is not known, but there is no evidence that the outfall discharge is causing this condition.



**Flounder sampling near the outfall during 2014**

### *Contingency Plan Thresholds and Ambient Monitoring Plan review*

Except for benthic diversity, and the nuisance algae (*Phaeocystis pouchetii*) in May, all other Contingency Plan thresholds were met in 2014; this includes all effluent quality thresholds. The ambient monitoring measurements of algae biomass, dissolved oxygen, sediment oxygenation, and flounder liver disease were all normal.


Staff presented detailed evaluations of Contingency Plan threshold exceedances and a summary of 2013 monitoring findings at a September 23, 2014 meeting of the Outfall Monitoring Science Advisory Panel. The Panel, which advises EPA and DEP on scientific issues related to the ambient monitoring, requested that MWRA suggest modifications to the *Phaeocystis* nuisance algae threshold to reduce the frequency of threshold exceedances that are unrelated to outfall discharge. These evaluations have been conducted, and will be discussed with regulators and the Panel soon.

The Panel also discussed beginning a review of the technical questions that underlie MWRA's Ambient Monitoring Plan studies, to identify whether there are new monitoring questions or issues that should be addressed (for example, emerging contaminants or possible impacts of climate change on the ability of the monitoring to detect outfall impacts). Staff have had preliminary discussions with regulators and Panel members on a workshop to begin these discussions. That workshop may occur this winter. Any changes to the monitoring would require review and approval by both EPA and DEP.

### **BUDGET/FISCAL IMPACT:**

In FY10, before the changes to the monitoring plan were implemented, the cost of professional services for a year of outfall monitoring was \$2.35 million. ENQUAL's FY16 Current Expense Budget for required harbor and outfall monitoring, including the water column, sediment, fish and shellfish, instrumented buoys, and water quality modeling, is \$1.46 million, reflecting the savings resulting from changes to the monitoring requirements.


## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 14, 2015  
**SUBJECT:** Approval of One New Member of the Wastewater Advisory Committee

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COMMITTEE: Wastewater Policy & Oversight

INFORMATION  
 VOTE

Wendy Leo, Senior Program Manager  
Preparer/Title 

Sean Navin  
Director, Intergovernmental Affairs 

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### RECOMMENDATION:

To approve the addition of one new member, Mr. James Pappas, to the Wastewater Advisory Committee.

### DISCUSSION:

The Wastewater Advisory Committee (WAC) was created in 1990 to offer independent recommendations on wastewater programs and policies; it is a successor to the Facilities Planning Citizen Advisory Committee, which was established during the planning of the new Deer Island Treatment Plant. WAC's members include citizen advocates, representatives from the Metropolitan Area Planning Council, watershed associations, the engineering and business communities, and the science and education fields. The Advisory Board has often had a representative/member as well.

WAC elects its chairman and employs an Executive Director (selected by WAC's membership with the concurrence and approval of MWRA's Public Affairs Department). WAC's current chairman is Taber Keally and WAC's current Executive Director is Andreae Downs.

The current Agreement between WAC and MWRA for FY16, which was approved by the Board on June 3, 2015, provides that WAC shall have a maximum of twenty members approved by MWRA's Board of Directors; the Agreement prohibits alternates or designees.

The current twelve members on WAC are: Mary Adelstein, citizen advocate; Craig Allen, Commonwealth Research Group, Inc.; Wayne Chouinard, Town of Arlington DPW; Zhanna Davidovitz, Massachusetts Institute of Technology; Ms. Karen Golmer, New England Water Innovation Network; Stephen Greene, Howland-Greene Consultants; Taber Keally (WAC Chairman), Neponset River Watershed Association; Karen Lachmayr, Harvard University; Beth Miller (WAC Vice-Chair), independent engineer; Martin Pillsbury, Metropolitan Area Planning Council; Elie Saroufim, Boston Water & Sewer Commission; Dan Winograd, Woodard & Curran.

In accordance with the current Agreement, WAC unanimously nominated the following individual for membership at its last meeting:

**James Pappas, P.E., FACEC**

Mr. Pappas has been nominated to WAC as an engineering expert. He has 40 years of experience in civil and environmental engineering, most recently at Stantec (retired). His expertise includes wastewater collection, treatment and disposal design and construction; facilities planning; NPDES permitting; water treatment, supply and distribution system design and construction; hazardous waste remedial investigation, feasibility studies, remedial design and remedial action; facility siting and permitting; solid waste landfill permitting, design, construction and operation. The many projects during his active career include the clarifiers at Deer Island, one of the interim outfalls, and the West Roxbury tunnel. He serves on the board of the Boston Society of Civil Engineers, and is also a very active member of the Water Environment Federation, New England Water Environment Association, and American Council of Engineering Companies.



### STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director *F. Laskey*  
**DATE:** October 14, 2015  
**SUBJECT:** Supply and Delivery of Sodium Hypochlorite to the Deer Island Treatment Plant  
Borden & Remington Corporation  
Bid WRA-4091

COMMITTEE: Wastewater Policy & Oversight

           INFORMATION

  X   VOTE

*Michele S. Gillen*  
Michele S. Gillen

Director of Administration

*Michael J. Hornbrook*  
Michael J. Hornbrook  
Chief Operating Officer

David Duest, Director, Wastewater Treatment  
John Sabino, Director of Procurement  
Preparer/Title

### RECOMMENDATION:

To approve the award of Purchase Order Contract WRA-4091, a one-year contract for the supply and delivery of sodium hypochlorite to the Deer Island Treatment Plant, to the lowest responsive bidder, Borden & Remington Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$1,091,605.20 for a period of one year, from November 17, 2015 through November 16, 2016.

### DISCUSSION:

MWRA uses sodium hypochlorite, which is a combination of chlorine and caustic soda, at the Deer Island Treatment Plant primarily to disinfect the plant's effluent. It is also used in the plant's non-potable process water system and in the odor control system.

Sodium hypochlorite is stored in three above ground tanks, each 30 feet high and 40 feet in diameter, with a capacity to hold 250,000 gallons. To avoid degradation of the product, resulting from being stored too long in the tanks, staff can meet treatment needs by utilizing two of three storage tanks on a rotating basis.

Sodium hypochlorite is generally manufactured in different strengths,



including 15%, 19%, and 20% solution. The differing strengths do not affect the treatment processes in any way; the only differences between the two are unit cost and availability. The most common and widely available strength is the 15% grade solution. In previous contracts, MWRA has purchased both 15% and 19% solution. Under the existing contract, also with Borden & Remington Corporation, MWRA is purchasing solely a 19% grade solution. Although the unit cost for 19% is slightly higher, the net result is less volume is needed to achieve the desired treatment results and the 19% had proven to be more cost-effective when comparing actual total chlorine purchased.

### Procurement Process

Bid WRA-4091 was advertised in the following publications: Boston Herald, Goods and Services Bulletin, El Mundo, and Banner Publications. In addition, bids were made available for public downloading on MWRA's e-procurement system (Event 2055), and six potential bidders were solicited through the e-Portal.

On September 16, 2015, Event 2055 closed, with the following results:

<b>Borden &amp; Remington Corporation</b>	Estimated Gallons	Percentage Solution	Unit Price Per Gallon	Extended Bid Price
	2,200,000	15% Solution	\$0.5293	\$1,164,460.00
	<b>1,736,842</b>	<b>19% Solution</b>	<b>\$.62850</b>	<b>\$1,091,605.20</b>
	1,650,000	20% Solution	No Bid	No Bid
Univar USA, Inc.	Estimated Gallons	Percentage Solution	Unit Price Per Gallon	Extended Bid Price
	2,200,000	15% Solution	\$0.5499	\$1,209,780.00
	1,736,842	19% Solution	No Bid	No Bid
	1,650,000	20% Solution	No Bid	No Bid
Kuehne Chemical Corporation	Estimated Gallons	Percentage Solution	Unit Price Per Gallon	Extended Bid Price
	2,200,000	15% Solution	\$1.15	\$2,530,000.00
	1,736,842	19% Solution	\$1.45	\$2,518,420.00
	1,650,000	20% Solution	\$1.53	\$2,524,500.00

Vendors were given the option to provide a unit bid price for any number of the three available grades of sodium hypochlorite. Under the current contract with Borden & Remington Corporation, which expires on November 16, 2015, MWRA is paying a fixed price of \$0.5998 per gallon for 19% solution. Compared to the existing contract, the cost per gallon price is increased by \$0.0287. The not to exceed amount of the contract is not a firm commitment of cost or a guarantee of purchase to the vendor; MWRA will only pay for product delivered and received.

It should be noted that the caustic soda market has historically been one of extreme volatility. However, this year, market experts view current market conditions for caustic soda as being decent and stable. The Purchasing Unit contacted Borden & Remington Corporation and they

stated they attributed this year's cost increase to MWRA primarily as a result of a slight rise in caustic soda prices.

Staff have reviewed Borden & Remington Corporation's bid and have determined that it meets all of the requirements of the bid specifications. Therefore, staff recommend the award of this one-year purchase order contract to Borden & Remington Corporation, as the lowest responsive bidder.


**BUDGET/FISCAL IMPACT:**

There are sufficient funds available for the first portion of this contract in the approved FY16 Current Expense Budget. Appropriate funding will be included in the Proposed FY17 Current Expense Budget request for the remaining term of the contract.

**MBE/WBE/PARTICIPATION:**

Borden & Remington Corporation is not a certified Minority- or Women-owned business.


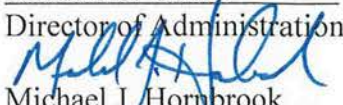
STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 14, 2015  
**SUBJECT:** Deer Island Treatment Plant Fire Alarm System Replacement Design and Engineering Services During Construction  
RDK Engineers  
Contract 6904

COMMITTEE: Wastewater Policy & Oversight

INFORMATION  
 VOTE

David F. Duest, Director, Deer Island WWTP  
Richard J. Adams, Manager, Engineering Services  
Preparer/Title

  
Michele S. Gillen  
Director of Administration  
  
Michael J. Hornbrook  
Chief Operating Officer

*On October 15, 2014, staff provided the Board a presentation on the need and scope for a Deer Island Fire Alarm System Replacement project. This staff summary seeks Board approval for design and engineering services during construction to implement this project. The costs and scope of the project is consistent with the information provided to the Board in October 2014.*

**RECOMMENDATION:**

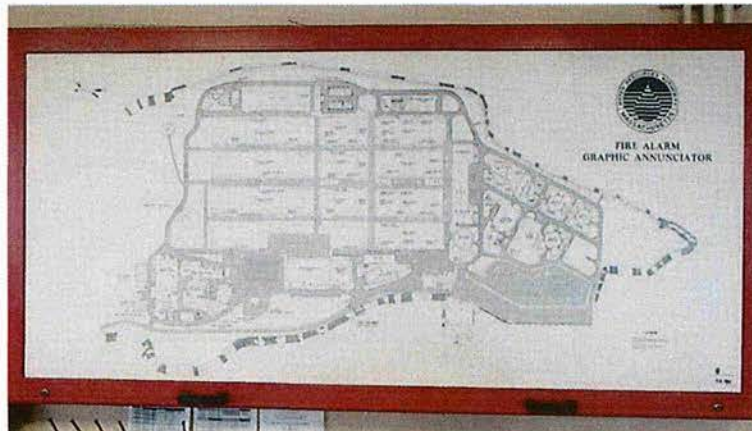
To approve the recommendation of the Consultant Selection Committee to select RDK Engineers to provide preliminary design, final design, and engineering services during construction for the Deer Island Treatment Plant Fire Alarm Replacement project, and to authorize the Executive Director, on behalf of the Authority, to execute said contract with RDK Engineers in an amount not to exceed \$2,078,771, for a contract term of 81 months from the Notice to Proceed.

**BACKGROUND:**

The Deer Island Wastewater Treatment Plant (DITP) is one of the largest wastewater treatment plants in the world. The plant provides primary and secondary treatment of wastewater collected from 43 member sewer communities in the Greater Boston area. The plant systems sequentially came on-line beginning in 1992 and was completed in 2000 at a cost of \$3.8 billion. DITP consists of a number of complex wastewater treatment processes that include mechanical, electrical and controls to operate and control the wastewater treatment process. The infrastructure required to maintain these systems include: electrical, mechanical, HVAC, controls and personal protections systems to name a few. The average age of these system is

approximately 18 years and a number are reaching the end of its useful life. These systems have been identified in MWRA's 2013 Master Plan.

The fire alarm system, is one of the largest fire alarm systems in a single facility in the Commonwealth of Massachusetts, consisting of: a Fire Alarm Central Monitoring system ("Front End") located in the Primary Operations Building; a Graphic Annunciation Panel located at the Main Gate Guard House; 3000 initiating devices located throughout the plant; 43 local Fire Alarm Control Panels; and a redundant fiber optic communication loop.

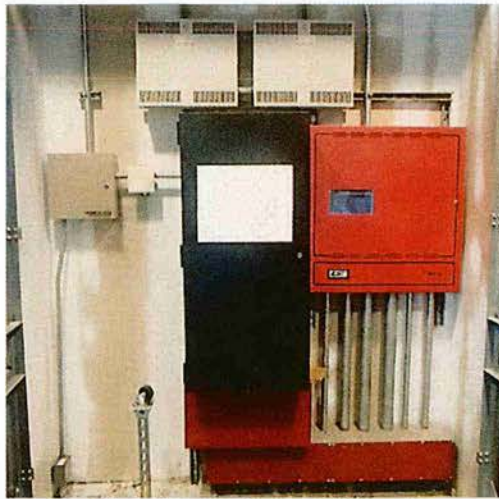


Graphic Annunciator

The Fire Alarm Control Panels (FACPs) provide the communication link between each building to the Front End. There are total of 43 FACPs located (at least one in each building). The FACP sends data through a redundant fiber optic highway to the Front End when an initiating device senses conditions such as smoke and heat fire. In turn, the Front End initiate's a general alarm which is sent to the Winthrop and Boston Fire Departments.

#### **DISCUSSION:**

The major elements of the fire alarm system (e.g. Front-End and FACPs) contain circuit boards that are obsolete and staff can no longer obtain spare parts. The existing fiber optic cable utilizes a multi-mode, buffered, optical glass fiber cores. This cable was designed and utilized in the late 1980s early 1990s. Since then there have been significant improvements in the fiber optic industry increasing data transfer rates and decreasing the equipment to transmit data over longer cable lengths. In addition, the cable is over 20 years old and may need to be replaced to ensure reliability in the future. The initiating devices (e.g. heat and smoke detectors, strobes, horns, pull stations) are proprietary to each system manufacturer and are not interchangeable and therefore all initiating devices will need to be replaced.



Fire Alarm Control Panel

Contract 6904 will include design, bidding and construction administration services for the Fire Alarm Replacement project (MWRA Construction Contract No. 7051), and engineering services during construction. In addition, the Consultant will be tasked with performing an assessment of the existing fiber optic data highway during the Preliminary Design Report phase to ascertain the condition and life expectancy of the cables. The fiber optic data highway system will be replaced, if required, in the construction contract. The Consultant will also evaluate several other factors into the design phase such as:

- Investigate different fire alarm manufacturer systems to determine if open architecture is available to eliminate possible propriety in the future;
- Investigate the condition of existing fire pumps and determine if some can be eliminated if sufficient water pressure is available (a Factory Mutual recommendation); and
- Determine modifications to the existing system due to any updated federal, state or local codes.

It should be noted that this contract does not include Resident Engineering and Inspection (REI) services. The level of effort for REI will not be fully known until final design is complete. At that time, staff will assess whether or not this work can be performed in-house or under a separate, competitively bid procurement.

The construction project will include the replacement of the existing fire alarm system including the front-end, graphical panels, and all field devices. In addition, the replacement of the existing fiber optic data highway will be included, depending upon the findings as noted above. The approved FY16 Capital Improvement Program budget includes an amount of \$16 million for the construction phase of the replacement of the fire alarm system. It should be noted that this amount does not include any cost for the replacement of the fiber optic data highway system.

### **Procurement Process**

Staff utilized a one-step/evaluative Request for Qualifications/Proposal (RFQ/P). Proposals were evaluated by using the following criteria: Cost (35 points), Qualifications and Key Personnel (20 points), Technical Approach/Capacity/Organization and Management Approach

(17 points), Experience/Past Performance on Similar Non-Authority Projects (15 points), Past Performance on Authority Projects (10 points), Minority- and Women-Owned Business Enterprise Participation (3 points).

MWRA received proposals from the following four firms: RDK Engineers, CDM Smith Inc., FS&T, and ARUP. Cost proposals with level of effort are presented below:

<u>Proposers</u>	<u>Proposed Contract Cost</u>	<u>Level of Effort</u>
CDM Smith Inc.	\$1,870,541	11,807 hours
RDK Engineers	\$2,078,771	11,459 hours
FS&T	\$2,168,187	14,798 hours
ARUP	\$2,411,434	12,754 hours

The five voting members on the Selection Committee then scored and ranked the proposals as follows:

<u>Proposers</u>	<u>Points</u>	<u>Order of Preference*</u>	<u>Final Ranking</u>
RDK Engineers	416	7	1
CDM Smith Inc.	397	11	2
ARUP	395	14	3
FS&T	362	18	4

\* Order of Preference represents the sum of the individual Selection Committee members' rankings. The firm receiving the highest number of points is assigned a "1"; the firm receiving the next highest number of points is assigned a "2," and so on.

RDK Engineers received the highest total points and was ranked first by the Selection Committee

The Selection Committee selected RDK Engineers, as the best firm and the best value for MWRA to complete this project despite being the second lowest in overall cost. The firm proposed an excellent project team with excellent relevant experience and past performance on non-MWRA projects (RDK has not performed work for the MWRA in the past 15 years). The Selection Committee was in agreement that RDK Engineers technical approach was comprehensive and provided solid details on how it would bring this project to completion. RDK's proposal included an appropriate number of total hours, which was distributed appropriately among a very experienced staff for the development of the Preliminary Design Report and design phases that are the most critical aspects of this project and would be instrumental in ensuring the successful completion of the resulting construction project. Staff are of the opinion that the more experienced project team would produce well-defined bid plans and specifications.

Conversely, the Selection Committee was in agreement that although CDM Smith Inc.'s overall cost proposal was the lowest, there was concern over the distribution of hours (Project Manager hours compared to technical staff). CDM Smith Inc.'s proposal included a total of 11,807 hours

of which 3,188 hours (or 27%) were dedicated to Project Management compared to RDK Engineers proposal which included a total of 11,459 hours of which 1,111 hours (or 9.7%) were to provide the same management oversight. In addition, CDM Smith Inc.'s proposal included a total of approximately 3,400 hours to perform the preliminary design report and design phases compared to RDK's proposal which included approximately 5,900 hours to perform the same tasks. The Selection Committee felt that CDM's proposal did not carry sufficient hours to perform the technical elements of the PDR or design phase.

The Selection Committee also felt that CDM Smith Inc.'s proposal included a team with the least amount of experience of all firms in the fire protection design field. CDM Smith Inc.'s team has significant experience in water and wastewater design, but lacked in fire alarm design expertise. Their allocation of hours and lack of applicable experience played a significant role in the Selection Committee's final vote and ranking.

Although generally meeting the qualifications required for this project, the Selection Committee was of the general opinion that the cost included in the proposals submitted by FS&T and ARUP were excessive for the scope of work in the RFQ/P.

The Selection Committee felt that RDK Engineers' proposal represents the best overall value (total cost and level of effort by a highly qualified team) of the four proposals. The Selection Committee was of the opinion that it included the best design team and included the appropriate number of hours, by category, with the proper staffing mix (senior and junior level) to successfully complete the development of the technical specifications. Therefore, the Selection Committee recommends approval of this contract to RDK Engineers in an amount not to exceed \$2,078,771.

**BUDGET/FISCAL IMPACT:**


The approved FY16 Capital Improvement Program includes a budget of \$2,100,000 for Contract 6904. The recommended award amount is \$2,078,771.

**MBE/WBE PARTICIPATION:**

The minimum MBE and WBE participation requirements established for this project are 7.18 and 5.77%, respectively. RDK Engineers has committed to 11% MBE and 10% WBE participation.




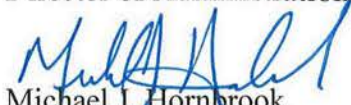
**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 14, 2015  
**SUBJECT:** Thermal/Power Plant Fuel Oil System Upgrade, Deer Island Treatment Plant  
J.F. White Contracting Co.  
Contract 7061A

COMMITTEE: Wastewater Policy & Oversight

INFORMATION  
 VOTE

David P. Duest, Director, Deer Island WWTP  
Richard J. Adams, Manager, Engineering Services  
Preparer/Title

  
Michele S. Gillen  
Director of Administration  
  
Michael J. Hornbrook  
Chief Operating Officer

**RECOMMENDATION:**

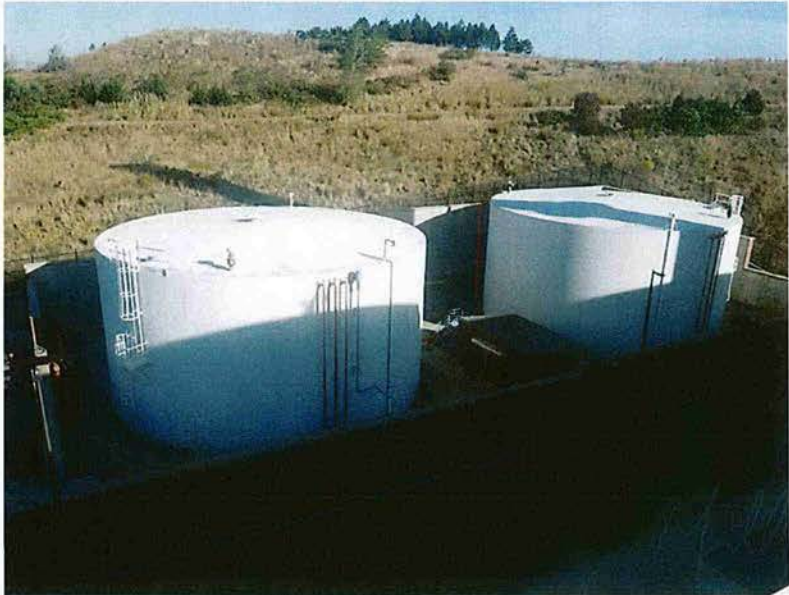
To approve the award of Contract 7061A, Thermal/Power Plant Fuel Oil System Upgrade, Deer Island Treatment Plant, to the lowest responsible and eligible bidder, J.F. White Contracting Co., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$4,550,000 for a contract term of 540 calendar days from the Notice to Proceed.

**DISCUSSION:**

MWRA Contract No. 7061A will provide a new complete fuel oil transfer pump skid installed on a newly installed elevated platform, as well piping, valves and associated controls in the Fuel Oil Tank Farm located on the northern side of Deer Island's Thermal Power Plant. The contract work will provide a fully redundant fuel delivery system to the two 26 MegaWatt (MW) Combustion Turbine Generators (CTGs).

The existing 26 MW CTGs, located in the Thermal Power Plant, have been in operation for close to 18 years. These CTG units were installed by Eversource (formerly NStar) as part of the Boston Harbor Project to provide a fully redundant backup power source, required by the Environmental Protection Agency to maintain the operation of the wastewater treatment plant in the event of complete loss of power from the electrical transmission grid.

The two CTG units utilize a low-sulfur 0.3% per ASTM D-396 based diesel No. 2 fuel oil for operation. The fuel oil is stored in two 750,000 gallon vertical cone roof tanks. These tanks also provide fuel oil for the two high pressure boilers in the Power Plant.

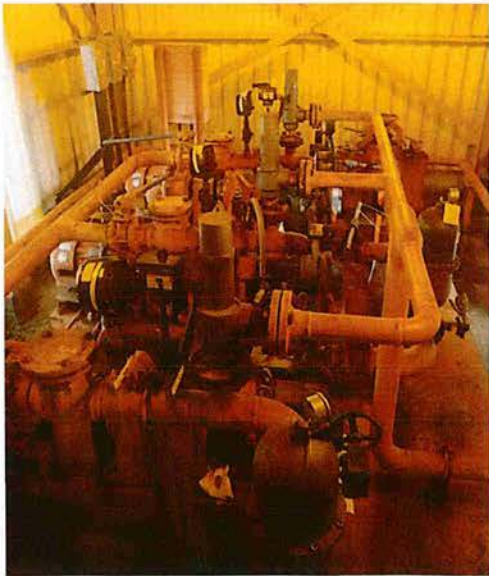


Fuel Oil Tank Farm

Currently, the fuel oil is pumped from the two tanks to the CTGs and boilers via a fuel oil transfer pump forwarding skid that is located at the base of the fuel oil tank containment system. The existing transfer skid has three AC pumps; two are required to operate when the CTGs are on line, only one is needed when the boiler is operating on oil. One pump is available for standby duty.



Fuel Oil Skid Enclosure



Existing Fuel Oil Skid

This project will provide for a fully redundant fuel oil transfer pump forwarding skid that is mounted above grade on a new platform within the Tank Farm containment area. This will ensure that the plant can continually operate the CTGs even if there is a breach in one of the two bulk storage tanks. A new piping system, parallel to the existing piping system, will be installed from the bulk storage area to the CTGs located in the Power Plant. In addition, a fully redundant control system will be integrated into the Plant-wide Control System, commonly referred to as "PICS." The new fuel oil delivery system will be fully redundant as required by the Massachusetts Department of Environmental Protection.

To accomplish this work, the contractor will be limited to two four-hour shutdowns of the fuel oil system to tie the new system into the CTGs. Shutdowns will only be scheduled in low flow conditions and will be weather dependant. The CTG units will not be available during the two shutdown periods.

### **Procurement Process**

Contract 7061A was advertised and bid in accordance Chapter 149 of the Massachusetts General Laws. Bids were opened on September 3, 2015; the results are presented below.

<b><u>BIDDERS</u></b>	<b><u>BID PRICE</u></b>
J.F. White Contracting Co.	\$4,550,000.00
William M. Collins Co., Inc.	\$5,546,526.00
Beacon Piping Co.	\$5,867,000.00
<i>Engineer's Estimate</i>	<i>\$4,632,026.00</i>

Per Massachusetts General Laws Chapter 149, Section 44F(3), the Authority rejected the sole 7061A sub-bid received in the category of Miscellaneous and Ornamental Iron because the sub-bid price included work not specified in that sub-bid category. Following the sub-bid rejection each 7061A general bidder, including J.F. White, was instructed to include an allowance in the amount of \$620,000 in Item 2 of the Form for General Bid for the Miscellaneous and Ornamental Iron work.

In accordance with General Laws Chapter 149, Section 44F (4) (a) (2), the Authority is now in the process of soliciting new sub-bids for Miscellaneous and Ornamental Iron from qualified sub-bidders. Following the submission of those sub-bids, J.F. White will be directed to cause the Miscellaneous and Ornamental Iron work to be performed by the solicited sub-bidder who submits the lowest responsive bid, and J.F. White's Contract Price, per the same statutory provision, will be adjusted by the difference between the low sub-bid price and the above \$620,000 allowance amount.

Staff have reviewed all the bids and have determined that J.F. White Contracting Co. meets all of the requirements of the bid. J.F. White's bid price is 1.8% lower than the Engineer's Estimate. J.F. White Contracting Co. has performed a number of construction projects on Deer Island including several in the Deer Island Thermal/Power Plant over the last 10 years and is

thoroughly familiar with the facility, including the policies and procedures required by the MWRA to perform work at Deer Island. MWRA staff have been very satisfied with the performance of J.F. White Contracting Co. on current and past construction contracts.

References were checked and found to be favorable. Staff have determined that the bid price is reasonable, complete and includes the payment of prevailing wages.

Staff have determined that J.F. White Contracting Co. possesses the skill, ability and integrity necessary to perform this work and is qualified to do so. Staff are of the opinion that the J.F. White Contracting Co. can complete the work for the bid price submitted. Therefore, staff recommend the award of this contract to J.F. White Contracting Co. as the lowest responsible and eligible bidder.

**BUDGET/FISCAL IMPACT:**

Funding of \$4,300,000 was included in the approved FY16 Capital Improvement Program budget for this contract. The \$250,000 higher recommended award will be absorbed within the current 5-year capital spending cap.

**MBE/WBE PARTICIPATION:**

The D/MBE and D/WBE participation requirements for this contract were established at 3.4% and 3.80%, respectively. MWRA's Affirmative Action and Compliance Unit has determined that J.F. White Contracting Co.'s bid meets these requirements.



# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard  
100 First Avenue, Building 39  
Boston, MA 02129

Frederick A. Laskey  
Executive Director

Telephone: (617) 242-6000  
Fax: (617) 788-4899  
TTY: (617) 788-4971

## WATER POLICY AND OVERSIGHT COMMITTEE MEETING

*Chair:* A. Pappastergion

*Vice-Chair:* (vacant)

*Committee Members:*

J. Carroll

J. Foti

H. Vitale

J. Walsh

J. Wolowicz

to be held on

Wednesday, October 14, 2015

Location: 100 First Avenue, 2nd Floor  
Charlestown Navy Yard  
Boston, MA 02129

Time: Immediately following Wastewater Comm.

## AGENDA

### **A. Information**

1. John J. Carroll Water Treatment Plant – 10 Year Operation Status Report

### **B. Contract Awards**

1. Engineering Services to Conduct Feasibility Study for Section 56 General Edwards Bridge Crossing of the Saugus River: Weston & Sampson Engineers, Inc., Contract 7500
2. Metropolitan Operations Paving: Newport Construction Corp., Contract OP-288

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Water Policy and Oversight Committee

September 16, 2015

A meeting of the Water Policy and Oversight Committee was held on September 16, 2015 at the Authority headquarters in Charlestown. Chairman Pappastergion presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Cotter, Flanagan, Foti, Pena, Vitale and Walsh; Mr. Carroll joined the meeting in progress. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Pam Heidell, Dave Coppes, and Bonnie Hale. The meeting was called to order at 12:05 p.m.

**Approvals**

\*Supply of Water to Southfield

Staff described the recommendation to endorse Southfield's admission to the MWRA Water System, and the MWRA Advisory Board indicated its endorsement as well. The Committee recommended approval of the recommendation (ref. agenda item B.1).

(Mr. Carroll joined the meeting.)

**Information**

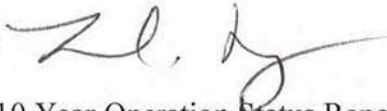
Update on Spot Pond Covered Storage Tank

Staff gave a presentation on the project, which is nearing completion. Mr. Laskey stated that a dedication would be held sometime in the next few months.

The meeting adjourned at 12:25 p.m.

\* Approved as recommended at September 16, 2015 Board of Directors meeting.

## STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 14, 2015  
**SUBJECT:** John J. Carroll Water Treatment Plant – 10 Year Operation Status Report

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COMMITTEE: Water Policy & Oversight

INFORMATION  
 VOTE

Bradley Palmer, Manager, Transmission and Treatment  
Guy M. Foss, Director, Western Operations  
David Coppes, P.E., Director, Waterworks  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

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*The John J. Carroll Water Treatment Plant completed its tenth year of operation on July 27, 2015. Both the Ozone and UV Treatment facilities have performed exceptionally well, meeting all regulatory requirements and providing excellent tasting water. This staff summary provides the Board with an update on the performance of the plant to date, summarizing changes made since initial construction and highlighting upcoming challenges.*

### RECOMMENDATION:

For information only.

### DISCUSSION:

Since July 2005, the Carroll Water Treatment Plant (CWTP) has successfully disinfected flows ranging from 144 to 367 million gallons per day (mgd) with Ozone treatment. All drinking water also began receiving Ultraviolet (UV) disinfection treatment in April 2014. Together these two disinfection methods have provided clean and great tasting water to MWRA water communities. Staff have optimized operation of the plant, improved response to plant shut-downs and equipment malfunctions, and have modified equipment and controls to improve plant reliability and process control. The plant has been visited by delegations from around the world and featured in tours for national conferences of the American Waterworks Association, International Ozone Association, and New England Waterworks Association.

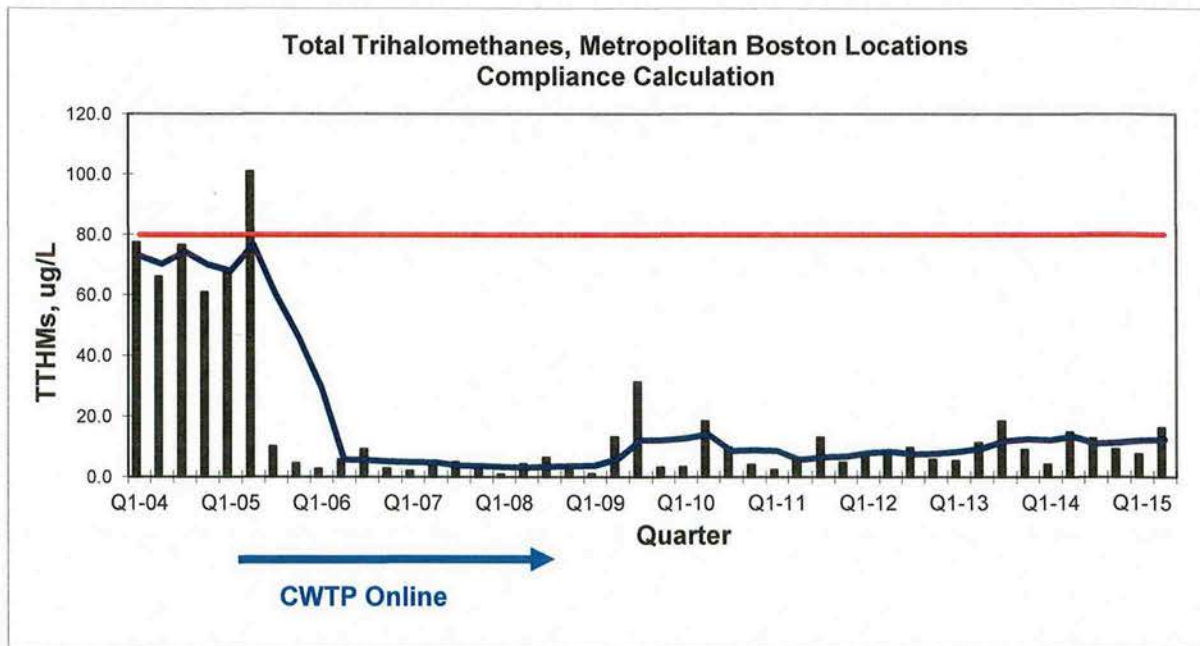


Major highlights include:

- In 10 years of operation, the plant has met all regulatory treatment requirements;
- Water quality has improved dramatically with increased disinfection achievement, significant reductions in regulated disinfection by-products, lead and copper corrosion control compliance, and most notably improved taste and odor with a reduction in complaints;
- A well-structured maintenance program to protect plant assets and sustain equipment reliability has been developed and implemented;
- Plant processes have been optimized to simplify control, make the plant more reliable, and efficiently use energy and chemicals to produce the highest quality water; and
- The original plant has undergone many system improvement projects to improve reliability, increase energy efficiency, and meet new regulatory requirements.

## Water Quality

Using ozone since 2005 and UV light since April 2014, the CWTP has exceeded regulatory requirements for inactivation of 99.9% of *Giardia*, 99% of *Cryptosporidium* and 99.99% of viruses that may be in our source water. These disinfectants perform without creating the regulated disinfection by-products (total trihalomethanes, and haloacetic acids) created by the previous ‘chlorine-only’ treatment. In fact, the levels of disinfection by-products have dropped dramatically since the plant went on line.



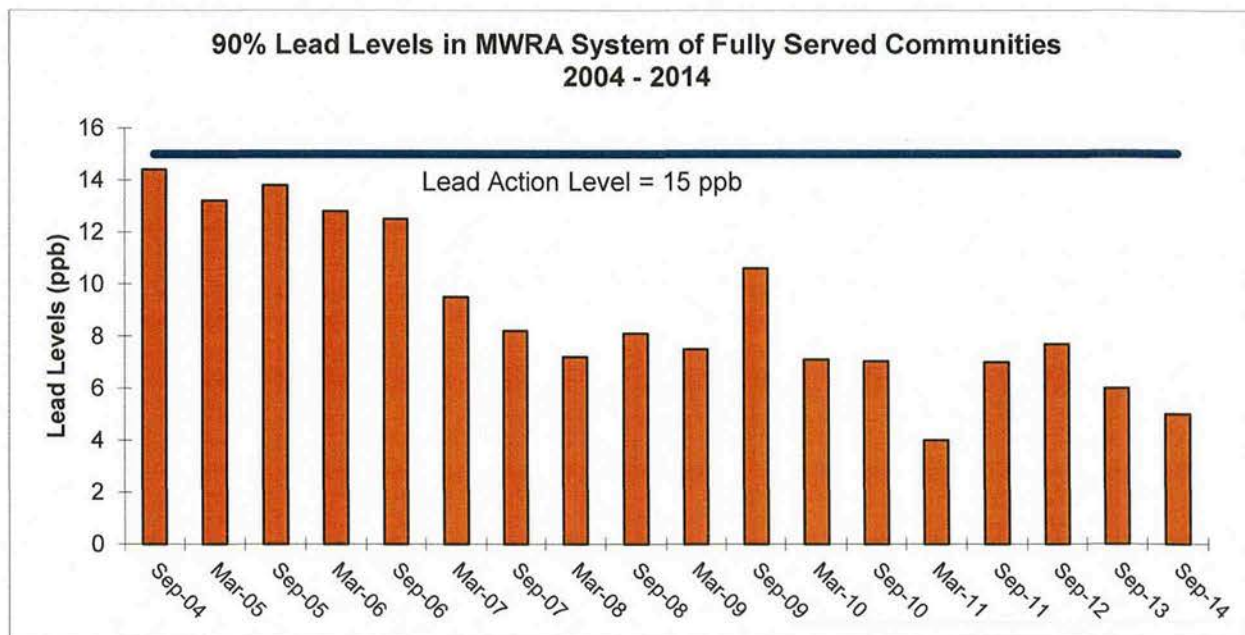
Most noticeably to our customers, ozone reduces apparent water color and neutralizes taste and odor compounds that that previously affected MWRA’s system, particularly during summer when algae grows in Wachusett Reservoir.



Chlorine and ammonia are combined at the plant to form monochloramine, a residual disinfectant that carries deep into MWRA's community distribution systems inhibiting microbiological re-growth. Over two thousand distribution system bacteriological samples are collected from community distribution system each month and bacterial counts have been very low and chlorine residuals have been very good without creating chlorine taste and odor complaints.

Water aesthetics have been good enough to win the "Best of New England" taste award twice from the New England Waterworks Association and the "Best of the Best" for the Boston Water and Sewer Commission (with MWRA taking second place) at the American Waterworks Association's national conference in June of 2014.

Lead and copper corrosion distribution system monitoring shows levels below regulated action levels due to the plant reliably meeting mandated Optimum Water Quality Parameter measures for alkalinity and pH that are the plant's corrosion control treatment processes.



In addition to the "Best" awards, the plant water operations and quality assurance staff have also received the Department of Environmental Protection's Massachusetts Public Water System Award, and the Annual Water Fluoridation Quality Award from the US Center for Disease Control and Department of Public Health.

### **Maintenance Program**

The preventative maintenance (PM) program, established to support CWTP, includes more than 4,000 pieces of equipment and 7,000 PM work orders in the Maximo maintenance database. Plant maintenance staff regularly complete over 99% of PM work orders with uncompleted tasks given priority when addressing maintenance backlog. As a result, equipment reliability has been excellent as evidenced by the continuous regulatory achievement of the Plant.

A detailed winter maintenance program is conducted each year starting in early November and continuing into February. During these 'half plant' operations an entire treatment train is shut down, drained and cleaned, and maintenance is performed on equipment that can't easily be taken out of service during periods of higher demand.

### **Process Optimization**

The CWTP has a sophisticated control system that monitors thousands of process variables and provides notification and alarm to plant operators of situations that require intervention. The plant spends approximately \$6 million of chemicals each year and uses \$1.4 million in electricity. Plant management and process control staff track and monitor treatment processes closely and over the years have fine-tuned operation and re-designed systems and procedures to improve the quality of water produced at the plant and minimize variability.

Unplanned plant shutdowns coupled with long restart times were an issue in the initial days of operating the plant. In the first two months of operation, the plant experienced eight unplanned shutdowns and in the first year there were a total of sixteen. Two major contributing factors to unplanned plant shutdowns was the sensitivity of the Ozone system to power fluctuations and to turbine trips at the Cosgrove intake facility. Plant shutdowns not only cause the obvious loss of water in storage but also caused disruptions to the chemical feed systems resulting in less than optimal water quality parameters. Staff were able to modify the ozone control system, with cooperation of the manufacturer, to automatically restart the ozone generators as long as certain parameters were met. Staff also modified control of the ozone destruct system and flow control at the Cosgrove intake to reduce the incidence of turbine related plant shut downs. These changes both improved the up-time of power generation at Cosgrove and decreased the number of unplanned plant shut downs. In the last five years of operation, the plant has averaged only one unplanned plant shut down per year; a significant reduction.

Restarting the plant involves a complicated procedure that originally could take as much as four hours to complete. After a concentrated effort to evaluate the start-up procedure, staff were able to streamline process steps and modify control algorithms to reduce start-up time to about an hour and a half, a significant improvement. Plant operators periodically are required to shut down and restart the plant to allow critical maintenance activities to occur and to keep them trained and ready to respond to unanticipated shut-downs. Each maintenance shutdown is treated as a drill to improve performance.

Staff also developed alternate chemical flow pacing controls that allow independent operation of each ozone contactor and each treatment train. This has reduced reliance on the single inlet meter for total plant control and allows staff the flexibility to respond to equipment failures and example) without completely shutting down the plant and restarting.

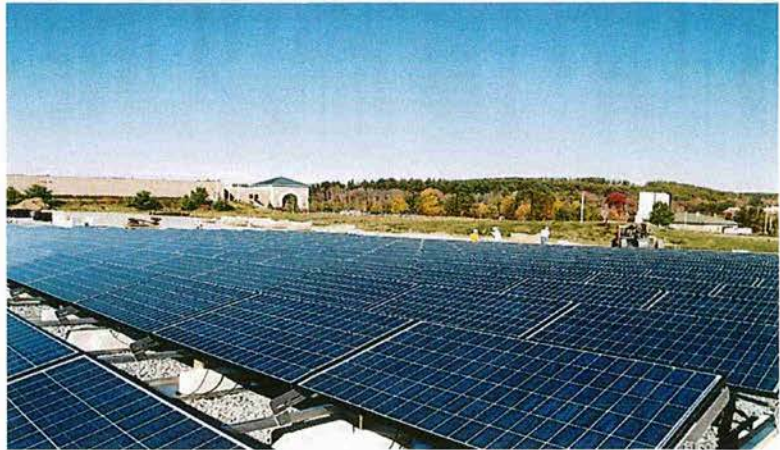
### **Energy Conservation**

In keeping with MWRA's focus on energy efficiency, several initiatives at CWTP have resulted in a reduction in energy use of several hundred thousand dollars per year in electricity (as previously stated, the annual CWTP energy costs are \$1.4 million). Energy audits were conducted which recommended replacement of lighting fixtures, installation of variable speed drives for re-circulating pumps on the heating system, and carbon dioxide sensors for control of

HVAC air supply. The dry feed mixers in the post treatment building were eliminated after trials indicated that application from the slurry tanks was adequate to achieve complete mixing without the motor operated mixers. Ozone production has also been optimized to run on a constant percent weight basis by calculating, using oxygen and electrical costs, the range of costs per pound of ozone produced. A higher percent weight requires more electricity and a lower percent weight requires more oxygen and there is a sweet spot around 9.5% that minimizes total cost.

### **Alternative Energy**

Using American Recovery and Reinvestment Act funds, a 496 kw solar photovoltaic array was installed at CWTP. The PV array is made up of 2,420 individual photovoltaic panels and is located east of the Ozone Building. At the time of its installation it was one of the largest solar arrays in the state. The system off-sets electric use at the plant by producing approximately 5% of the total annual kWh usage. The CWTP site was also investigated for potential wind turbine installation; however, the amount of measured wind was not sufficient for a wind turbine to be cost-effective.



### **Addition of Ultraviolet (UV) Disinfection**

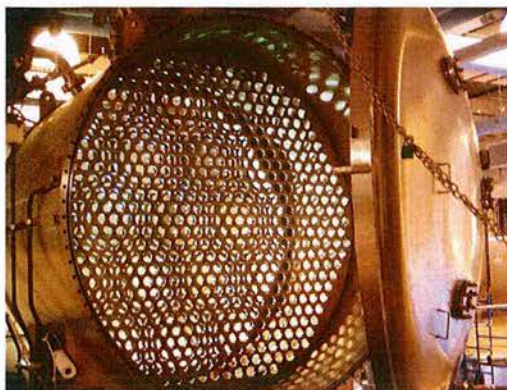
In response to drinking water regulations that required a secondary disinfection methods for all unfiltered surface water supplies, ultraviolet disinfection (UV) was added to the plant to meet *Cryptosporidium* inactivation regulations. The new UV system went on line in April of 2014, at a cost of \$32 million, and the treatment system has met all regulatory requirements since that time. The project also included improvements in the sodium hypochlorite feed including a new chlorine contact chamber and relocation of bisulfite and fluoride feeds.



## Continued Improvements

Since construction of the CWTP, a number of projects have been implemented to respond to changes in regulation or to improve the reliability and performance of the treatment plant. Some examples include:

### Installation of closed-loop cooling system for ozone generators



Within the first two years of operation, one of the four ozone generators developed a cooling water leak due to biologically induced corrosion from untreated cooling water. A closed-loop cooling system was installed that transfers heat from the ozone generators to a chemically stable coolant and then through heat exchangers to raw water that is re-circulated to head of the plant. The ozone generators were then completely disassembled and rebuilt. A picture of the interior of an ozone generator during rebuild is shown on the left.

### Installation of a Redundant Gaseous Oxygen Line

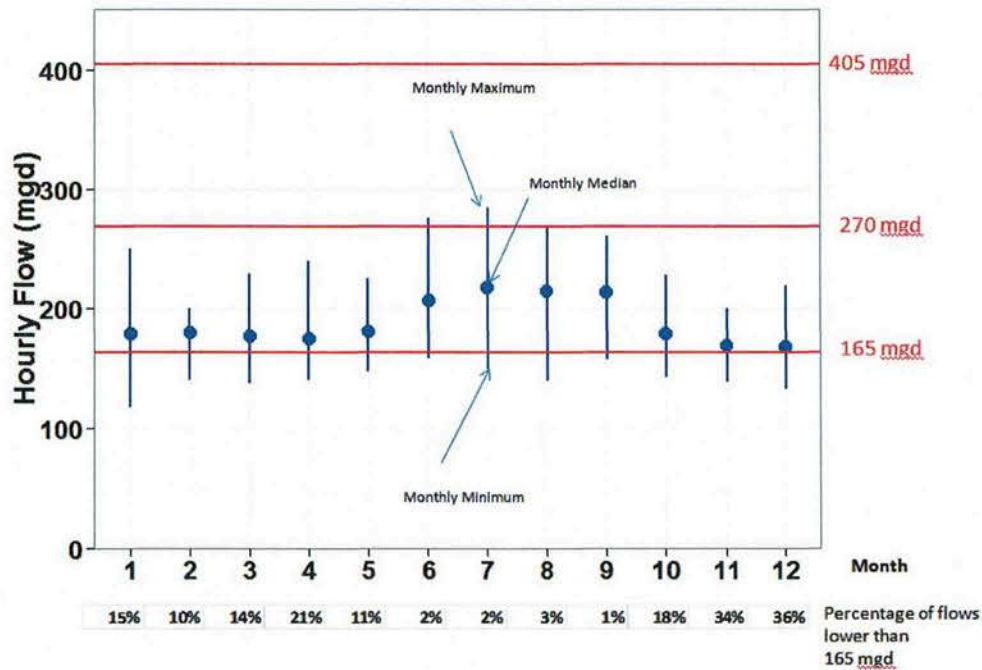
The piping system that supplies gaseous oxygen from the liquid oxygen storage tanks to the Ozone Generators came under review while staff were conducting facility inspections to identify single points of failure. The piping system included two lines from the storage tanks to the Ozone Building but only one line from the entry point of the building to the Ozone Generators. A second oxygen line within the interior of the building was designed and construction to provide redundancy and eliminate this critical single point of failure. In addition, safety valves on the three Liquid Oxygen Storage Tanks were upgraded. Liquid oxygen in the storage tanks is typically at 90 pounds per square inch (psi) and -295 degrees Fahrenheit. Picture above shows temporary oxygen vaporizers supplying plant ozone generators while redundant gaseous oxygen line was installed and work on liquid oxygen tank was performed.



## Future Challenges

Staff are implementing an asset protection and replacement plans to address aging equipment that might be approaching the end of its useful life. For example, the ozone generators will need to be rebuilt in the next 5 years, variable frequency drives on the plant water pumps are approaching obsolescence, and chemical storage tanks will need replacing in about 10 years. An upcoming project will remove the soil on top of the 45 million gallon buried water storage tanks, replace the 10 year old water-proof coating and protective board, and back fill with soil that drains better.

The plant was designed for an average day flow of 270 (mgd) and a minimum flow of 165 mgd. Actual system demands have dropped since the design of the plant that the plant regularly is run at or below the minimum design flow rate. This creates challenges for operations and maintenance staff to continue to achieve tight process control and to operate systems at peak efficiency. Sizing of chemical feed pumps and other equipment are being scrutinized when replacements are necessary to make sure that new equipment is right-sized.




The construction of the Wachusett Aqueduct Pumping Station will also present some significant challenges. Although the new pumping station is a separate building within the site, the new construction will need to interface with the existing plant. Power for the new pumps will be supplied from the existing main electrical system at the plant and will take emergency power from the four existing generators. The rapid start and stop of flow from the pump station will impact plant operations in the same way manner that turbine trips at Cosgrove impacted the plant. To accommodate the rapid change in water level in the ozone contactors the capacity of the ozone off-gas destruction units will need to be increased and a new hydraulic control weir will need to be constructed in the existing effluent channel during half plant operation.

In addition, a new security gate will installed at the front gate and MWRA's adjacent former Interim Corrosion Control Facility will be converted to a maintenance facility to support the plant and other water infrastructure.

**SUMMARY:**

The CWTP has been operational for ten years. The plant has been very reliable and has met all design expectations and regulatory requirements. The Ozone and UV treatment facilities have provided clean great tasting water to MWRA's 2.1 million customers. Modifications have been made in the last ten years to improve efficiencies or eliminate single sources of failure at the plant. Staff continue to evaluate the plant for asset protection needs as the plant ages and replacement of equipment and systems are necessary.


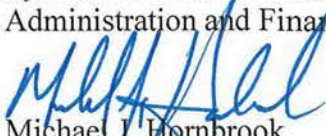
**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 14, 2015  
**SUBJECT:** Engineering Services to Conduct Feasibility Study  
Section 56 General Edwards Bridge Crossing of the Saugus River  
Weston & Sampson Engineers, Inc.  
Contract 7500

COMMITTEE: Water Policy & Oversight

INFORMATION  
 VOTE

Anandan Navanandan, P.E., Chief Engineer  
Geetha Mathiyalakan, Ph.D., P.E., Program Manager, E&C  
Preparer/Title

  
Michele Gillen, Director  
Administration and Finance  
  
Michael J. Hornbrook  
Chief Operating Officer

**RECOMMENDATION:**

To approve the recommendation of the Consultant Selection Committee to select Weston & Sampson Engineers, Inc. to provide Engineering Services to Conduct Feasibility Study for Section 56 General Edwards Bridge Crossing of the Saugus River, Contract 7500, and to authorize the Executive Director, on behalf of the Authority, to execute said contract, in an amount not to exceed \$246,998 for a contract term of 18 months from the Notice to Proceed.

**BACKGROUND:**

MWRA's Section 56 water distribution pipe, constructed in 1934, provides redundancy to the Northern High Service communities of Revere, Lynn, Nahant, Swampscott and Marblehead. As shown in Attachment 1, Section 56 is located along Ocean Avenue, Revere Street, Revere Beach Reservation and Route 1A in Revere, and continues on the Lynnway (Route 1A) and Broad Street to the intersection with Washington Street in Lynn. Section 56 crosses the Saugus River at the Revere/Lynn city line over the General Edwards Bridge crossing. The General Edwards Bridge Crossing between the north and south abutments is approximately 1,400 feet long (see Attachment 2).

Section 56 primarily consists of 20-inch diameter cast iron pipe for most of its length with a 20-inch diameter flanged steel pipe as it crosses the Saugus River at the General Edwards Bridge at the Revere/Lynn city line. It transitions to a 30-inch diameter flanged steel pipe between two tunnel shafts under the Saugus River to clear the draw bridge channel.

Section 56 has experienced several leaks with a significant number at the bridge crossing where the pipe has experienced severe corrosion most likely due to age and environmental conditions. Section 56 at the bridge crossing was placed out of service in February 2014. As shown in the photographs, MWRA staff performed numerous leak repairs near the existing north and south tunnel shafts over the years and in 2014 wrapped the exterior of the pipe with the double layer of corrosion protection sheets. The previous repairs also included six welded plugs and mechanical clamping on the exterior of the pipe at three split sections. The three mechanical clamps were near the north and south towers and on the Lynn side where the pipe hangs below the bridge.

During a visual inspection in September 2015 by MWRA staff, it was observed that Section 56 had experienced severe exterior and interior corrosion with splitting of the existing pipe at multiple locations, and also the existing pipe showed signs of severe corrosion at several locations. It was determined that the existing pipe had deteriorated beyond repair.



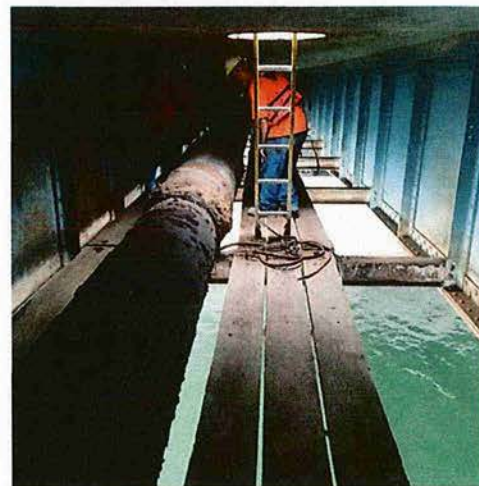
Leak Repairs near North Tunnel Shaft, 2014



Leak Repairs - Welded Plug & Mechanical Clamp



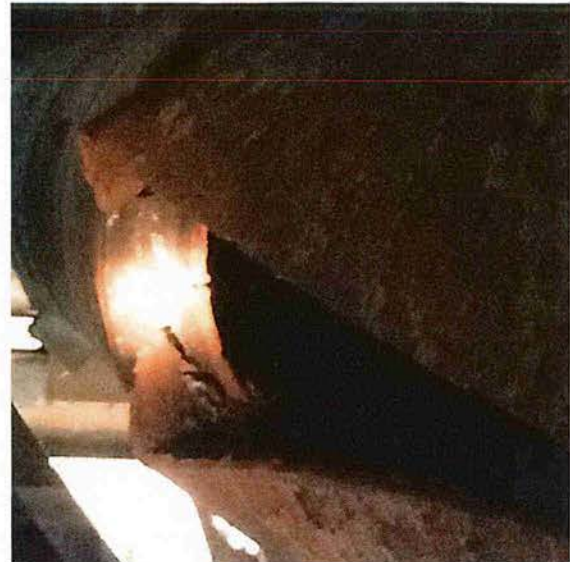
Corrosion Protection at South Tunnel Shaft



Condition of the Pipe under the bridge, 2015



Exterior rust and corrosion of the Pipe under the bridge, 2015



Splitting of the pipe under the bridge, 2015

### **DISCUSSION:**

The scope of this contract is to conduct a feasibility study for replacement of Section 56 crossing of the Saugus River. The scope includes an evaluation of various methods for replacement of the river crossing including replacement in place and submerged river crossings using traditional open-cut and trenchless technologies.

The key elements of this feasibility study will consist of field reconnaissance inspecting the external condition of the existing pipe, identifying the cause of corrosion, review of existing information including existing bridge record drawings, borings, and DEP database, development of pipe replacement alternatives, screening and ranking of alternatives, recommendation of preferred alternative, estimated design and construction costs and schedules, develop future geotechnical investigation scope for the recommended pipe replacement/river crossing alternative, and submission of the Feasibility Study Report.

The study will also define work limits and identify environmental impacts, permits, easement/land acquisition, potential utility conflicts, potential soil disposal/contamination impacts, and traffic impacts and mitigation. The feasibility study will account for the connections to the existing pipe, installation of valves and other appurtenances, and define a construction schedule that provides the lowest construction risk and cost. The study will recommend a water main replacement that meets MWRA's operational and maintenance standards, and meets design and schedule constraints of the Project. The results of this study will be used to develop the detailed design scope for a future engineering contract.

### **PROCUREMENT PROCESS:**

MWRA utilized a one-step Request for Qualification Statements/Proposals (RFQ/P) process with a cost-plus-fixed-fee/percentage fee compensation method. The Selection Committee met on June 12, 2015, and established Evaluation Criteria for the RFQ/P with points as follows: Cost



(35 points), Qualifications and Key Personnel (25 points), Past Performance on Authority Projects (15 points), Technical Approach and Capacity/ Organization and Management Approach (15 points), and Experience/Past Performance on Similar Non-Authority Projects (10 points).

On July 30, 2015, MWRA received Qualification Statements/Proposals from the following five firms: CDM Smith, CDR Maguire, Fay Spofford & Thorndike, LLC (FS&T), Michael Baker International, and Weston & Sampson. The following are the cost and the total level of effort proposed by each firm:

<b>Proposer</b>	<b>Proposed Cost *</b>	<b>Level of Effort (hrs)</b>
CDR Maguire	\$217,579	1,362
Weston & Sampson	\$246,998	1,821
CDM Smith	\$259,395	1,294
FS&T	\$328,812	2,179
Michael Baker Intl	\$509,775	3,518

\* MWRA reviewed cost proposals and confirmed accuracy

The Selection Committee met and evaluated and ranked the proposals. After these discussions, the five voting members of the Selection Committee scored the proposals per the Evaluation Criteria. The five voting members on the Selection Committee scored and ranked the proposals as follows:

<b>Proposer</b>	<b>Total Points</b>	<b>Order of Preference*</b>	<b>Final Ranking</b>
Weston & Sampson	388.75	5	1
CDM Smith	351.5	11	2
CDR Maguire	313.5	16	3
FS&T	292.3	20	4
Michael Baker Intl	272	23	5

\* Order of Preference represents the sum of the individual Selection Committee member's rankings where the firm receiving the highest number of points is assigned a "1", the firm receiving the next highest number of points is assigned a "2", and so on.

Weston & Sampson received the highest total points and was unanimously ranked first by the Selection Committee.

Weston & Sampson's proposed total cost was the second lowest and the Selection Committee determined the total cost and the level of effort were the most appropriate of all proposers.

Weston & Sampson proposed a higher level of effort than both CDR Maguire and CDM Smith, and the Selection Committee agreed that Weston & Sampson had the most appropriate spread of level of effort between the tasks. The Selection Committee also determined Weston & Sampson's team staff were well qualified and had relevant experience. Weston & Sampson's qualifications included a comprehensive team including strong experience and expertise of McMillen Jacob Associates for trenchless technologies and Green International Affiliates, Inc. for bridge structural engineering. Also, based on internal evaluations, Weston & Sampson's overall past MWRA project performance was rated very good to excellent.

Conversely, the Selection Committee was in agreement that although CDR Maguire's overall cost proposal was the lowest, there was concern that CDR Maguire's proposal included an inadequate level of effort. The Selection Committee concluded that CDR Maguire did not provide the sufficient, appropriate, and experienced level of effort required for the project.

Although CDM Smith proposed an experienced project team with a sound technical approach, the Selection Committee was concerned that the level of effort was too lean mainly for the task of Feasibility Study, and the overall cost was higher than the recommended firm.

Similarly, FS&T's proposal generally met the qualifications required for this project. However, the Selection Committee was of the opinion that FS&T's cost and the level of effort were excessive for the scope of work in the RFQ/P.

The Selection Committee was not satisfied with the qualifications of the project team or the technical approach submitted by Michael Baker International. The firm proposed the highest cost and highest level of effort for the project.

Based on the final rankings, the Selection Committee recommends the award of this contract 7500 to Weston & Sampson, in the amount of \$246,998.

**BUDGET/FISCAL IMPACT:**

The FY16 Capital Improvement Program includes a budget of \$200,000 for Contract 7500. The recommended contract award amount is \$246,998 or \$46,998 over budget. This amount will be covered within the five-year CIP spending cap.

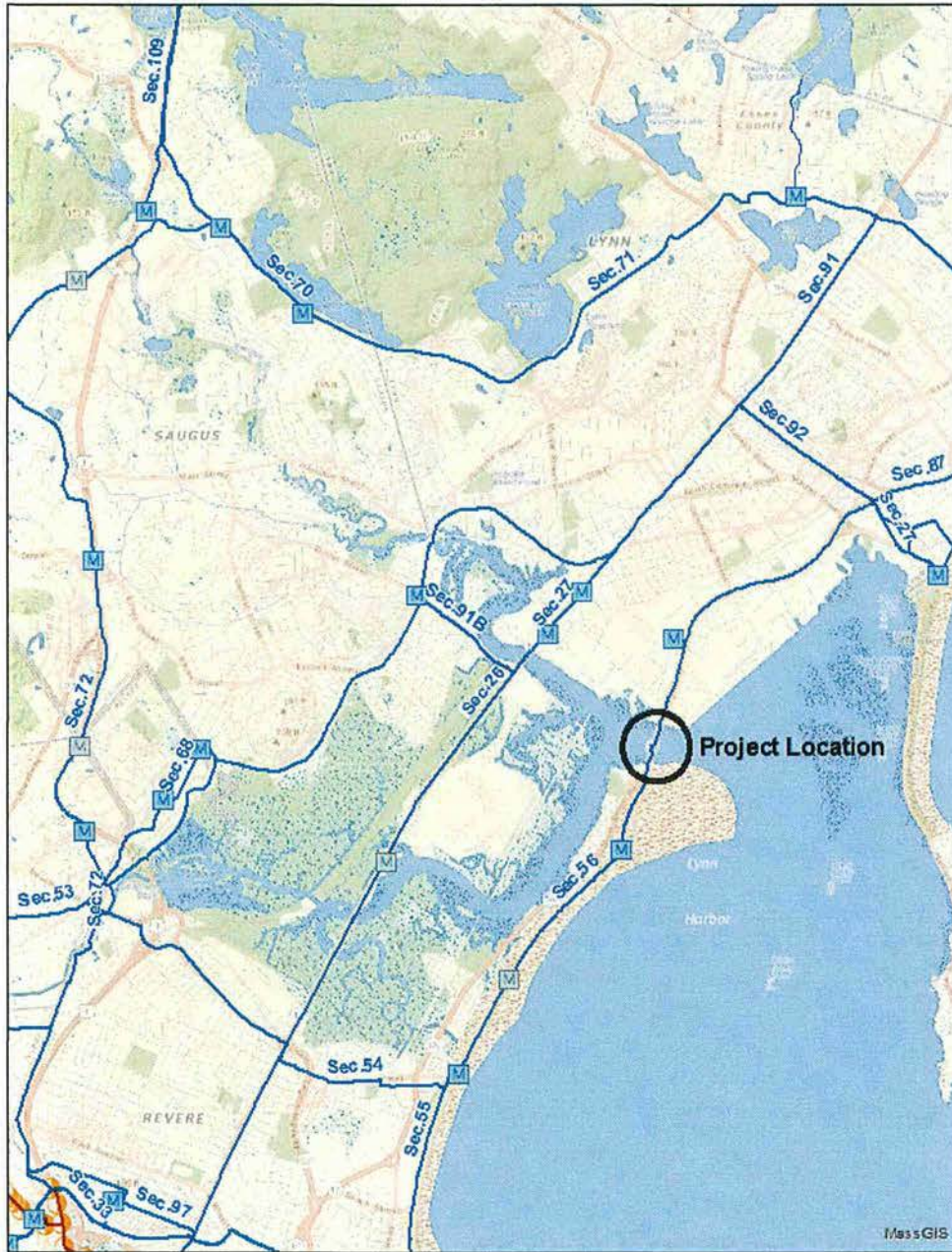
**MBE/WBE PARTICIPATION:**

There were no minimum MBE and WBE participation requirements established for this contract due to the limited opportunities for subcontracting. However, Weston & Sampson proposed the use of Green International, an MBE firm, as a subconsultant.

**ATTACHMENTS:**

1. Section 56 Saugus River Crossing/Project Location
2. General Edwards Bridge

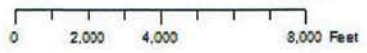
Attachment  
1



Section 56 Saugus River Crossing / Project Location



1 inch = 4,000 feet



# Attachment 2



**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** October 14, 2015  
**SUBJECT:** Metropolitan Operations Paving  
Newport Construction Corp.  
Contract OP-288



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COMMITTEE: Water Policy & Oversight Committee


     INFORMATION

  X   VOTE



Michele S. Gillen

Director, Administration



Michael J. Hornbrook

Chief Operating Officer

Kathleen M. Pearson, Project Manager  
David W. Coppes, Director, Waterworks  
Preparer/Title

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**RECOMMENDATION:**

To approve the award of Contract OP-288, Metropolitan Operations Paving, to the lowest responsible and eligible bidder, Newport Construction Corp., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$1,127,070.50 for a contract term of 730 days from the Notice to Proceed.

**DISCUSSION:**

Contract OP-288 is a replacement paving services contract to provide permanent paving on an as-needed basis at locations where roadways have been excavated and temporarily patched due to maintenance, repair, and new construction work performed by MWRA staff. Typical projects performed by MWRA staff include valve replacement, leak repair, blow-off retrofit, sewer pipe repair and facility pavement repair. As locations requiring permanent paving are identified, the contractor will complete the work within 30 calendar days after the original notification from the Authority.

All paving performed under this contract will comply with MWRA's mitigation policy concerning paving. Paving shall be limited to areas that have been excavated or otherwise damaged by MWRA maintenance, repair, and new construction work.

Contract OP-288 was advertised and bid, utilizing MWRA's e-procurement system (Event 2068), in accordance with Chapter 30 of Massachusetts General Laws. On September 15, 2015 three bids were received; the results are presented on the following page.

**BIDDERS****BID AMOUNT**

<i>Engineer's Estimate</i>	\$1,079,593.60
Newport Construction Corp.	\$1,127,070.50
Sunshine Paving Corp.	\$1,257,617.00
Lorusso Corp.	\$1,814,375.55

The Engineer's Estimate was developed based upon pricing from the previous paving contracts. Newport Construction Corp.'s bid is 4.2% higher than the Engineer's Estimate and 11.6% lower than the second-lowest bidder. The bid price was greater than the Engineer's Estimate due in part to the higher cost of the top course compared to the unit price used in the Engineer's Estimate.

It should be noted that Newport Construction held the previous paving contract, which was approved under delegated authority in fall 2012 in the amount of \$924,200. Staff have been satisfied with the services provided by Newport Construction Corp.

After reviewing the bids, staff have determined that Newport Construction Corp.'s bid price is reasonable, complete and includes the payment of prevailing wages, as required. Staff are of the opinion that Newport Construction Corp. possesses the skill, ability, and integrity necessary to perform the work under this contract and is qualified to do so.

Therefore, staff recommend the award of this contract to Newport Construction Corp. as the lowest responsible and eligible bidder.

**BUDGET/FISCAL IMPACT:**

Funding for the first portion of this contract is included in the Approved FY16 Current Expense Budget (CEB). Appropriate funding will also be included in subsequent Proposed CEB requests for the remaining term of the contract.

**MBE/WBE PARTICIPATION:**

There were no MBE or WBE participation requirements established for this contract due to the limited opportunities for subcontracting.



# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard  
100 First Avenue, Building 39  
Boston, MA 02129

Frederick A. Laskey  
Executive Director

Telephone: (617) 242-6000  
Fax: (617) 788-4899  
TTY: (617) 788-4971

## **PERSONNEL & COMPENSATION COMMITTEE MEETING**

*Chair:* K. Cotter  
*Vice-Chair:* J. Wolowicz  
*Committee Members:*  
J. Carroll  
P. Flanagan  
J. Foti  
A. Pappastergion  
H. Vitale  
J. Walsh

to be held on

Wednesday, October 14, 2015

Location: 100 First Avenue, 2nd Floor  
Charlestown Navy Yard  
Boston, MA 02129

Time: Immediately following Water Comm.

### **A. Approvals**

1. PCR Amendments – October 2015
2. Appointment of Information Technology Financial Manager, MIS

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Personnel and Compensation Committee

September 16, 2015

A meeting of the Personnel and Compensation Committee was held on September 16, 2015 at the Authority headquarters in Charlestown. Chairman Cotter presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Flanagan, Foti, Pena, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Karen Gay-Valente and Bonnie Hale. The meeting was called to order at 12:25 p.m.

**Approvals**

\*PCR Amendments – September 2015

The Committee recommended approval of the PCR amendments (ref. agenda item A.1).

\*Appointment of Program Manager, Instrumentation & Control, Deer Island Treatment Plant

The Committee recommended approval of the appointment of Mr. Christian A. Murphy, P.E. (ref. agenda item A.2).

\*Appointment of Assistant Manager of Workers' Compensation and Labor Relations

The Committee recommended approval of the appointment of Ms. Susan Brazil (ref. agenda item A.3).

\*Appointment of Security Services Administrator

The Committee recommended approval of the appointment of Mr. Lawrence Gladhill, Jr. (ref. agenda item A.4).

The meeting adjourned at 12:30 p.m.

\* Approved as recommended at September 16, 2015 Board of Directors meeting.



## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** October 14, 2015  
**SUBJECT:** October PCR Amendments



COMMITTEE: Personnel and Compensation

*Karen Gay Valente*  
Karen Gay-Valente, Director of Human Resources  
Joan C. Carroll, Manager Compensation  
Preparer/Title

           INFORMATION  
  X   VOTE

*Michele S. Gillen*  
Michele S. Gillen  
Director, Administration

### RECOMMENDATION:

To approve the amendments to the Position Control Register (PCR) included in the attached chart.

### DISCUSSION:

The Position Control Register lists all positions of the Authority, filled and vacant. It is updated as changes occur and it is published at the end of each month. Any changes to positions during the year are proposed as amendments to the PCR. All amendments to the PCR must be approved by the Personnel Committee of the Board of Directors. All amendments resulting in an upgrade of a position by more than one grade level, and/or an amendment which creates a position increasing annual cost by \$10,000 or more, must be approved by the Board of Directors after review by the Personnel Committee.

### October PCR Amendments

There are five PCR amendments related to changes within the Operations Division, one PCR amendment relocating a position from Administration to Operations and one PCR amendment related to a change in Internal Audit.

The amendments are:

1. Grade change to a vacant position, Assistant Director, Internal Audit from nonunion grade 14 to nonunion grade 13 to realign the grade with current responsibilities.
2. Title and location change to a vacant position, Program Manager, Security/Safety, Human Resources Department to Program Manager, Electrical, Capitol Engineering Department, Deer Island to meet capital projects requiring significant electrical expertise.
3. Title and grade change to a vacant position in the Engineering & Construction Department from Senior Program Manager, grade 30, to Program Manager, Electrical, grade 29, to meet capital projects requiring significant electrical expertise.
4. Title and grade change to a filled position in the ENQUAL Department from Program Manager, Water Quality Monitoring, grade 29, to Sr. Program Manager, Environmental Monitoring, grade 30, to realign title and grade as a result of an increase in

responsibilities due to a retirement within the department and reassignment of that position's responsibilities.

5. Title, grade and location change to a vacant position from Program Manager, Outfall Monitoring, grade 29, ENQUAL Department to Project Manager, Contaminant Monitoring System, grade 25, Water Quality Assurance Department to meet staffing needs for the Contaminant Monitoring System.
6. Title and grade change to a vacant nonunion position in the Engineering & Construction Department from Senior Construction Manager, nonunion grade 14, to Deputy Chief Engineer, nonunion grade 15, to improve Capital Improvement Program schedules and spending.
7. Title and grade change to a vacant position in the Deer Island Trade Labor Maintenance Department from Building and Grounds Worker, grade 13, to HVAC Specialist, grade 16 to meet HVAC staffing needs.

The first five amendments require approval by the Personnel and Compensation Committee. The final two amendments require Board approval after review by the Personnel and Compensation Committee.

**BUDGET/FISCAL IMPACT:**

The annualized budget impact of the seven PCR amendments is a potential savings of \$102,832 to a potential cost of \$30,825, depending on the individual selected for each position upon the completion of the hiring process. Staff will ensure that if there is any cost increase associated with these PCR amendments, it will not result in spending over the approved FY16 Wages and Salary budget.

**ATTACHMENTS:**

New/Old Job Descriptions

**MASSACHUSETTS WATER RESOURCES AUTHORITY  
POSITION CONTROL REGISTER AMENDMENTS  
FISCAL YEAR 2016**

**PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - September 16, 2015**

Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary	Estimated Annual \$ Impact	Reason For Amendment
P4	Internal Audit Internal Audit 8210007	V	G	Assistant Director, Internal Audit	NU	14	N/A	NU	13	\$113,830	\$75,803 - \$117,894	-\$38,027 - \$4,064	To realign grade level with current responsibilities
P5	Administration Human Resources 8520008	V	T,L	Program Manager, Security/Safety	9	29	Program Manager, Electrical	9	29	N/A	N/A - N/A	N/A - N/A	To meet complex electrical engineering staffing needs at Deer Island Treatment Plant
P6	Operations Engineering & Construction 5525061	V	T,G	Sr Program Manager	9	30	Program Manager, Electrical	9	29	\$98,303	\$103,856 - \$103,856	\$5,553 - \$5,553	To meet complex electrical engineering staffing needs at Chelsea Engineering & Construction Department
P7	Operations ENQUAL 2250005	F	T,G	Program Manager, Water Quality Monitoring	9	29	Senior Program Manager, Environmental Monitoring	9	30	\$112,968	\$117,682 - \$117,682	\$4,714 - \$4,714	To realign title and grade as a result of an increase in responsibilities due to a retirement within the department and reassignment of that position's responsibilities
P8	Operations ENQUAL 2250006	V	T,G,L	Program Manager, Outfall Monitoring	9	29	Project Manager, Contaminant Monitoring System	9	25	\$112,968	\$71,865 - \$96,795	-\$41,103 - -\$16,173	To meet staffing needs for the Contaminant Monitoring System
<b>PERSONNEL &amp; COMP COMMITTEE TOTAL=</b>					<b>5</b>		<b>SUBTOTAL:</b>					<b>-\$68,863 - -\$1,842</b>	

**PCR AMENDMENTS REQUIRING BOARD APPROVAL- September 2015**

Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary	Estimated Annual \$ Impact	Reason For Amendment
B6	Operations Engineering & Construction 55250141	V	T,G	Senior Construction Manager	NU	14	Deputy Chief Engineer	NU	15	\$121,160	\$96,029 - \$143,505	-\$25,131 - \$22,345	To improve Capital Improvement Program schedules and spending
B7	Operations Trade Labor Maintenance 2988008	V	T,G	Building & Grounds Worker	2	13	HVAC Specialist	2	16	\$57,782	\$48,944 - \$68,104	-\$8,838 - \$10,322	To meet Deer Island HVAC staffing needs
<b>BOARD TOTAL =</b>					<b>2</b>		<b>SUBTOTAL:</b>					<b>-\$33,969 - \$32,667</b>	
<b>GRAND TOTAL =</b>					<b>7</b>		<b>TOTAL ESTIMATED COSTS:</b>					<b>-\$102,832 - \$30,825</b>	



MWRA  
POSITION DESCRIPTION

**POSITION:** Assistant Director, Internal Audit

**PCR#:**

**DIVISION:** Internal Audit

**DEPARTMENT:** Internal Audit

**BASIC PURPOSE:**

Assists in the independent reviews of the Authority's operations and capital programs and related management systems and outside contracts which encompass these operations and programs, as defined in Section 7(h) of the Authority's enabling legislation.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Director, Internal Audit.

**SUPERVISION EXERCISED:**

Assists in the supervision of the Department's staff of professionals and administrative staff, and oversees audits of Authority operations and capital spending.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Assists in the development and implementation of comprehensive and effective audit programs.
- Assists in planning, organizing and directing internal financial, performance and contract audits, investigations and special assignments.
- Performs audits and management advisory services as required.
- Monitors the audit staffs' overall adherence to established audit policies and procedures, including the proper preparation of working papers, reporting of audit findings, and follow-up on audit recommendations.
- Provides technical guidance to the Law Division and other MWRA managers, including participation in the dispute resolution process related to contract claims.

## **SECONDARY DUTIES:**

- Performs related duties as required.

## **MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A four (4) year college degree in business, public administration or a related field. Graduate degree preferred; and
- (B) Ten (10) to twelve (12) years of auditing experience, of which at least five (5) years must be in a supervisory or managerial capacity; including three (3) years of supervisory experience; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of business principles.
- (B) Understanding of auditing practices, program evaluation and management analysis.
- (C) Knowledge of construction, engineering, and procurement practices.
- (D) Excellent verbal and written communication skills and interpersonal skills.

## **SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Motor Vehicle Operators License.

Certification as a Certified Public Accountant (CPA), Certified Internal Auditor (CIA), or Certified Systems Auditor (CISA) preferred.

## **TOOLS AND EQUIPMENT USED:**

Office machines as normally associated with the use of multiple-line telephone, personal computer, including word processing and other software, copy, and fax machine.

## **PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit and talk or hear, to use hands to feel, finger, handle or operate objects, including office equipment or controls and reach with hands and arms. The employee is frequently required to stand and walk; and occasionally climb or balance; stoop, kneel, crouch, crawl, or smell.

The employee must frequently lift and/or move up to 10 pounds, occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, peripheral vision, distance vision, depth perception and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally makes visits to operating facilities and construction sites. In these situations the employee is occasionally exposed to outdoor weather conditions, extreme heat or cold and wet, humid conditions (non-weather) and vibration. The employee occasionally works near moving mechanical parts, and in high precarious places. The employee is occasionally exposed to fumes, toxic or caustic chemicals and airborne particles. The employee occasionally exposed to risk of electrical shock and radiation.

The noise level in the normal work environment is a moderately quiet office setting. Visits made to operating facilities and construction sites include noise levels at the site that could range from loud to very loud.

**March 2015**

MWRA  
POSITION DESCRIPTION

**NEW**

**POSITION:** Assistant Director, Internal Audit

**PCR#:**

**DIVISION:** Internal Audit

**DEPARTMENT:** Internal Audit

**BASIC PURPOSE:**

Manages, reviews and assists in the independent reviews of the Authority's internal audits which include operations and related management systems and financial and performance audits which encompass these operations, as defined in Section 7(h) of the Authority's enabling legislation. Acts as Director, Internal Audit in his/ her absence.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Director, Internal Audit.

**SUPERVISION EXERCISED:**

Assists in the supervision of the Department's staff of professionals assigned to internal audits, and oversees audits of the Authority's operations.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Assists in the development and implementation of comprehensive and effective audit programs to meet the specific needs of an assignment with modification as the audit progresses.
- Assists in planning, organizing, directing and conducting internal financial and performance audits, investigations and special assignments to identify weaknesses and to evaluate the effectiveness of internal system controls..
- Performs audits and management advisory services as required.
- Monitors the audit staffs' overall adherence to established audit policies and procedures, including the proper preparation of working papers, reporting of audit findings, and follow-up on audit recommendations.

- Provides technical guidance to the Law Division and other MWRA managers, as required. Presents oral and written audit results and recommends a course of action to management and department personnel, and assists and prepares formal written reports of audit results, recommendations and responses.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A four (4) year college degree in business, public administration or a related field. Graduate degree preferred; and
- (B) Seven (7) to ten (10) years of auditing experience, of which at least five (5) years must be in a supervisory or managerial capacity; including three (3) years of supervisory experience; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of business principles.
- (B) Understanding of auditing practices, program evaluation and management analysis.
- (C) Knowledge of construction, engineering, and procurement practices.
- (D) Excellent verbal and written communication skills and interpersonal skills.

**SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Motor Vehicle Operators License.

Certification as a Certified Public Accountant (CPA), Certified Internal Auditor (CIA), or Certified Systems Auditor (CISA) preferred.

**TOOLS AND EQUIPMENT USED:**

Office machines as normally associated with the use of multiple-line telephone, personal computer, including word processing and other software, copy, and fax machine.

**PHYSICAL DEMANDS:**



The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit and talk or hear, to use hands to feel, finger, handle or operate objects, including office equipment or controls and reach with hands and arms. The employee is frequently required to stand and walk; and occasionally climb or balance; stoop, kneel, crouch, crawl, or smell.

The employee must frequently lift and/or move up to 10 pounds, occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, peripheral vision, distance vision, depth perception and the ability to adjust focus.

### **WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally makes visits to operating facilities and construction sites. In these situations the employee is occasionally exposed to outdoor weather conditions, extreme heat or cold and wet, humid conditions (non-weather) and vibration. The employee occasionally works near moving mechanical parts, and in high precarious places. The employee is occasionally exposed to fumes, toxic or caustic chemicals and airborne particles. The employee occasionally exposed to risk of electrical shock and radiation.

The noise level in the normal work environment is a moderately quiet office setting. Visits made to operating facilities and construction sites include noise levels at the site that could range from loud to very loud.

**October 2015**

MWRA  
POSITION DESCRIPTION

**OLD**

**POSITION:** Program Manager, Security/Safety

**PCR#:**

**DIVISION:** Administration

**DEPARTMENT:** Human Resources

**BASIC PURPOSE:**

Develops and manages security and safety programs which support Authority operations.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Deputy Director, Human Resources.

**SUPERVISION EXERCISED:**

None.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Identifies, develops and manages security and safety programs for the Authority, based on the operational needs of the organization.
- Drafts, revises and publishes written security and safety programs consistent with regulatory and industry standards.
- Supports in-house technical staff in the implementation of security and safety programs, including reviewing plans and developing strategy and audit protocols.
- Oversees the work of professional consultants under contract to the Authority, including quality of output and budget.
- Develops meaningful management indicators for use by senior managers.
- Recommends Authority policy regarding security sensitive and occupational safety and

health issues.

- Serves as technical consultant to senior management on issues relevant to security and occupational safety and health.
- Assists in the development of both departmental and Authority-wide APPOs and budgets related to the security and safety functions.
- Provides professional opinions to law, labor relations and risk management, including testifying as an expert witness.
- Represents the executive office in the investigation of serious or potentially serious accidents or security incidents.
- Interprets technical data provided by outside technical professionals.
- Serves as staff to the Safety Steering Committee and as technical advisor, and voting member on all other major Authority safety committees (e.g., Waterworks and Sewerage Divisional Safety Committees, Confined Space, Lockout/Tagout and Excavation Committees).
- Serves as a technical advisor to the Security Task Force.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of the principles and practices of a safety professional as normally attained through a graduate degree in science, engineering or related field; and
- (B) Understanding of issues related to safety, engineering, construction, risk management, environmental health, behavioral and applied sciences as normally attained through five (5) to seven (7) years experience; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Excellent interpersonal, oral and written communication skills.

### **SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Motor Vehicle Operators License.

Certification by the Board of Certified Safety Professionals or the American Board of Industrial Hygiene, or current eligibility for certification.

### **TOOLS AND EQUIPMENT USED:**

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, copy and fax machine.

### **PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit, talk or hear. The employee is regularly required to use hands to finger, handle, feel or operate objects, including office equipment, or controls and reach with hands and arms. The employee frequently is required to stand and walk.

There are no requirements that weight be lifted or force be exerted in the performance of this job. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

### **WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.

The noise level in the work environment is usually a moderately quiet office setting.

**November 2002**

Page 3 of 3

Program Manager, Security/Safety - Old



MWRA  
POSITION DESCRIPTION

**POSITION:** Program Manager, Electrical  
**PCR#:**  
**DIVISION:** Operations  
**DEPARTMENT:** Engineering - Deer Island/Chelsea

**BASIC PURPOSE:**

Provides electrical engineering support to operation and maintenance departments. Supervises project teams in the department to oversee professional engineering and design projects related to the rehabilitation and capital improvement of waterworks and wastewater facilities and infrastructure from conceptual planning through construction. Additionally, manages engineering and design projects related to the rehabilitation and capital improvement of water and wastewater facilities and infrastructure.

**SUPERVISION RECEIVED:**

Works under the general supervision of a Senior Program Manager

**SUPERVISION EXERCISED:**

Supervises electrical engineering staff, medium voltage technicians, and electrical distribution staff as needed.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Performs design, engineering and finalization of in-house projects involving repair/replace/modification activities, layout changes for shops, laboratories, offices and warehouses, lighting systems, and power distribution, including substation & power generation equipment.
- Develops preliminary designs, detailed designs and the preparation of plans and specifications for proposed electrical modifications/replacement and construction projects.

- Oversees installation, operation, maintenance and repair of complex electrical equipment including generation, transmissions, distribution systems.
- Oversees the preparation of plans and specifications for vendor contracts for proposed electrical modifications.
- Oversees reviews of and modifications to all operations and maintenance documentation with respect to electrical design changes.
- Assists the operations staff with engineering resolution and recommendations to electrical engineering problems, which arise during normal operations.
- Assists the maintenance staff with complex work orders and with the development of contract maintenance contracts.
- Provides on-site engineering inspection of construction projects generated by the Technical Services group, central engineering and outside consultants.
- Develops and maintains files and familiarity with all codes, code addends, code cases, and industry standards applicable to the electrical field and ensure that facility specifications comply.
- Performs periodic inspections to ensure facility-wide compliance with local and national electrical codes and other rules of safe electrical practice are enforced.
- Reviews electrical and related portions of design plans by outside firms who have been hired to design improvements or additions to facilities and infrastructure.
- Assists with the coordination of project activities with engineering consultants as required.
- Supervises the updating of electrical engineering drawings and records, and the subsequent forwarding (in accordance with established procedures) to the Technical Services Center.
- Provides oral and written reports to the Senior Program Manager detailing results of problem investigations, proposed resolution, and economic justification for the proposed changes.
- Evaluates assigned employees performance according to MWRA procedures.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of general and specific engineering and design principles and practices as attained through a accredited four (4) or (5) year college program in electrical engineering; and
- (B) Experience in design, installation and maintenance of a wide variety of electrical power and control equipment as normally acquired through seven (7) to nine (9) years of related electrical engineering experience; and
- (C) Experience with a complex processing facility and water or wastewater treatment operations and utility systems are desirable; or
- (D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Personal computer skills including spreadsheet, database, word processing, project management and GDS, CADD and AutoCADD desired.
- (B) Knowledge of Massachusetts bidding laws, including M.G.L Chapter 30, Chapter 149, and Chapter 25A construction bidding regulations.
- © Excellent interpersonal, written and oral communication skills.

**SPECIAL REQUIREMENTS:**

Possession of Engineer-in-Training certification preferred.

A valid Massachusetts Licensed Professional Engineering certificate preferred.

A valid Massachusetts Drivers License required.

**TOOLS AND EQUIPMENT USED:**

Office equipment as normally associated with the use of telephone, personal computer including

word processing and other software, copy and fax machine.

### **PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to stand, walk, climb or balance, stoop, kneel, crouch, or crawl, taste or smell.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, depth perception, peripheral vision and the ability to adjust focus.

### **WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts, and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electrical shock.

The noise level in the work environment is usually loud in field settings and moderately quiet in an office setting.

**October 2015**





MWRA  
POSITION DESCRIPTION

**POSITION:** Senior Program Manager

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Engineering & Construction

**BASIC PURPOSE:**

Manages all projects in assigned Programs from conceptual planning through construction contract award.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Assistant Director, Engineering.

**SUPERVISION EXERCISED:**

Exercises close supervision of the internal staff as necessary, including performance reviews, to manage engineering consultant activities.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Manages assigned Programs including conformance to standards and procedures, staffing assignments, project scheduling and prioritization, and work product quality.
- Oversees the work of professional engineering consultants under contract to the MWRA including quality of outputs, budget and schedule compliance and conformance to contract terms.
- Prepares project specifications, contract documents, requests for proposals and necessary documents to secure grants and permits from various federal and state agencies.
- Supervises professional engineering work of substantial difficulty and importance requiring the application of professional engineering principles and the exercise of independent engineering judgement.
- Coordinates projects with communities, government agencies and other MWRA

departments.

- Provides technical assistance to other staff in the development of program plans and designs for projects related to program management.
- Prepares annual and supplementary budget requests for the program.
- Participates in consultant selection procedures and contract negotiations.
- Addresses community and professional organizations on agency programs and policies, prepares reports and correspondence and maintains liaison with representatives of other agencies.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of engineering principles and practices as normally attained through a four (4) year college program in civil engineering or related field; and
- (B) Understanding of issues related to engineering design as acquired through eight (8) to ten (10) years of experience in water and/or wastewater field, of which a minimum of four (4) years is in a supervisory capacity; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of water and/or wastewater unit operations design and operation, process control theory, practices and principle and computer applications.
- (B) Demonstrated written and oral communication skills.

**SPECIAL REQUIREMENTS:**

Massachusetts Registered Professional Engineer preferred

A valid Class D Massachusetts Motor Vehicle Operators License.

### **TOOLS AND EQUIPMENT USED:**

Office equipment as normally associated with the use of telephone, personal computer including word processing and other software, copy and fax machine.

### **PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to stand, walk, climb or balance, stoop, kneel, crouch, or crawl, taste or smell.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, depth perception, peripheral vision and the ability to adjust focus.

### **WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts, and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electrical shock.

The noise level in the work environment is usually loud in field settings and moderately quiet in an office setting.

**June 2013**

MWRA  
POSITION DESCRIPTION



**POSITION:** Program Manager, Water Quality Monitoring

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** ENQUAD

**BASIC PURPOSE:**

Conceives, designs and manages water quality monitoring programs in Boston Harbor and Massachusetts Bay. Monitoring is performed both in-house and by consultant.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Director ENQUAL

**SUPERVISION EXERCISED:**

Exercises close supervision of one scientific staff. May also direct the work of contract employees and/or interns.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Oversees the design, execution and reporting of environmental quality monitoring programs, which may include water, plankton, benthos, sediment, fish and shellfish and effluent toxicity testing, in Boston Harbor and Massachusetts Bay as required by the NPDES Permit and MWRA planning needs.
- Participates with the Program Manager of Outfall Monitoring to manage consultant contracts for the design, execution and reporting of studies of environmental quality in Boston Harbor and Massachusetts Bay.
- Conceives, designs and oversees in-house MWRA monitoring of Boston Harbor and Massachusetts Bay, together with the Department of Laboratory Services.
- Participates with the Senior Program Manager of NPDES Compliance to ensure that

MWRA's environmental quality reports are in compliance with the requirements of the NPDES Permit.

- Interacts with other MWRA departments to integrate environmental findings and operational issues in order to optimize the environmental benefits of MWRA planning and operations.
- Participates with the Senior Program Manager of NPDES Compliance and the Program Manager of Outfall Monitoring, to ensure that the Contingency Plan is implemented appropriately.
- Provides technical review of consultant-prepared reports.
- Tracks consultant progress, including review of invoices and progress reports and coordinates consultant work with other, related project activities.
- Writes Requests for Proposals for Harbor and Outfall Monitoring contracts and sits on selection committees as required.
- Assists in the preparation of annual budgets and schedules and ensures compliance.
- Drafts internal and external correspondence and reports of both technical and administrative nature.
- Interacts with federal, state and local government and regulatory agencies such as EPA and DEP and the Outfall Monitoring Science Advisory Panel to ensure that MWRA monitoring is scientifically sound, cost-effective and relevant to MWRA projects.
- Makes policy recommendations for department presentations to the Executive Director on monitoring program findings.
- Presents findings to scientific community and the general public.

**SECONDARY DUTIES:**

- Performs other related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of principles and practices of environmental/marine science as normally

attained through an advanced degree, either a masters degree or Ph.D. degree program with specialization in a field such as microbiology, marine biological oceanography, or physical oceanography or related field; and

- (B) Demonstrated knowledge of environmental science/marine science as acquired through eight (8) to ten (10) years of experience; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated ability to gather, analyze and present technical information in a clear and understandable manner.
- (B) Demonstrated ability to lead a project team and develop and maintain productive working relationships with external parties.
- (C) Strong analytical and computer skills, including proficiency with statistical and graphical analyses, such as parametric, non-parametric, multivariate and multivariable analyses, spreadsheets, word processing and database application programs.
- (D) Ability to analyze and interpret scientific data.
- (E) Strong written and oral communication skills.

**SPECIAL REQUIREMENTS:**

Massachusetts registration as professional engineer or eligible through reciprocity.

Massachusetts Wastewater Treatment Plant Operations Grade VI certification, or ability to obtain within one (1) year.

**TOOLS AND EQUIPMENT USED:**

Office equipment as normally associated with the use of telephone, personal computer including word processing and other software, copy and fax machine. Work in the field will require working on large and small boats in Boston Harbor and Massachusetts Bay. Occasionally the employee may assist in the operation of water and sediment sampling devices or water quality measuring instruments. Familiarity with the operation of marine sampling devices, e.g., corers, Niskin bottles, C-T-Ds, and scientific laboratory instruments e.g., microscope, GC-MS is required.

### **PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to stand, walk, climb or balance, stoop, kneel, crouch, or crawl, taste or smell.

There are no requirements that weight be lifted or force be exerted in the performance of this job, although the employee will have opportunity to participate in field activities that involve lifting weight, e.g., water, sediment or other environmental samples or exerting force. Specific vision abilities required by this job include close vision, distance vision, depth perception, peripheral vision and the ability to adjust focus.

### **WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the regularly works in an office environment. The employee occasionally works near moving mechanical parts and is occasionally exposed to outdoor weather conditions. The employee occasionally will work on large and small boats in Boston Harbor and Massachusetts Bay. The employee is occasionally exposed to fumes or airborne particles and toxic or caustic chemicals.

The noise level in the work environment is usually a moderately quiet office setting.

**August, 1999**

MWRA  
POSITION DESCRIPTION



**POSITION:** Sr. Program Manager, Environmental Monitoring

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Environmental Quality

**BASIC PURPOSE:**

Conceives, designs and manages water quality monitoring programs in Boston Harbor and Massachusetts Bay. Implements monitoring program through internal or contractual resources. Reports monitoring results within MWRA and to the regulatory agencies. Participates in NPDES permit negotiations and manages related scientific and technical programs.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Director of the Environmental Quality.

**SUPERVISION EXERCISED:**

Exercises close supervision of scientific staff. Also directs the work of contract employees and/or interns.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Oversees the design, execution and reporting of environmental quality monitoring programs, which may include water, plankton, benthos, sediment, fish and shellfish and effluent toxicity testing, in Boston Harbor and Massachusetts Bay as required by the NPDES Permit and MWRA planning needs.
- Manages consultant contracts for the design, execution and reporting of studies of environmental quality in Boston Harbor and Massachusetts Bay.
- Oversees and directs the work of scientific staff in the group.
- Prepares information necessary for negotiating permit requirements and monitoring plans with state and federal agencies. Manages the preparation of required regulatory agency



reports and related special projects.

- Conceives designs and oversees in-house MWRA monitoring of Boston Harbor and Massachusetts Bay, together with the Department of Laboratory Services.
- Develops / makes recommendations for changes of MWRA outfall monitoring program by reviewing scientific literature and water quality regulations.
- Participates with the Senior Program Manager of NPDES Compliance to ensure that MWRA's environmental quality reports are in compliance with the requirements of the NPDES Permit.
- Interacts with other MWRA departments to integrate environmental findings and operational issues in order to optimize the environmental benefits of MWRA planning and operations.
- Participates with the Senior Program Manager of NPDES Compliance and the Program Manager of Data Management, to ensure that the Contingency Plan is implemented appropriately.
- Coordinates special project requests with existing department programs.
- Implements monitoring program of approximately \$1 to \$2 million using in-house or consultant resources.
- Oversees and manages mooring program, including review and analysis of data, and Bays Eutrophication Model (as required in DITP NPDES permit).
- Provides technical review of consultant-prepared reports.
- Organizes and analyzes monitoring data. Prepares reports interpreting data for scientific and lay audiences.
- Directs quality assurance programs for MWRA contractors.
- Tracks consultant progress, including review of invoices and progress reports and coordinates consultant work with other, related project activities.
- Writes Requests for Proposals for Harbor and Outfall Monitoring contracts and serves as chair of the selection committees.
- Assists in the preparation of annual budgets and schedules and ensures compliance.

- Drafts internal and external correspondence and reports of both technical and administrative nature.
- Interacts with federal, state and local government and regulatory agencies such as EPA and DEP and the Outfall Monitoring Science Advisory Panel to ensure that MWRA monitoring is scientifically sound, cost-effective and relevant to MWRA projects.
- Makes policy recommendations for department presentations to the Executive Director on monitoring program findings.
- Presents findings to scientific community and the general public.

**SECONDARY DUTIES:**

- Performs other related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of principles and practices of environmental/marine science as normally attained through an advanced degree, either a masters degree or Ph.D. degree program with specialization in a field such as microbiology, marine biology, or physical oceanography or related field; and
- (B) Demonstrated knowledge of environmental science/marine science as acquired through eight (8) to ten (10) years related experience of which a minimum of three (3) years is in a supervisory or managerial capacity; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated ability to gather, analyze and present technical information in a clear and understandable manner.
- (B) Demonstrated ability to lead a project team and develop and maintain productive working relationships with external parties.
- (C) Strong analytical and computer skills, including proficiency with statistical and graphical analyses, such as parametric, non-parametric, multivariate and multivariable analyses, spreadsheets, word processing and database application programs.

- (D) Ability to analyze and interpret scientific data.
- (E) Strong written and oral communication skills.

**SPECIAL REQUIREMENTS:**

None.

**TOOLS AND EQUIPMENT USED:**

Office equipment as normally associated with the use of telephone, personal computer including word processing and other software, copy and fax machine. Work in the field will require working on large and small boats in Boston Harbor and Massachusetts Bay. Occasionally the employee may assist in the operation of water and sediment sampling devices or water quality measuring instruments. Familiarity with the operation of marine sampling devices, e.g., corers, Niskin bottles, C-T-Ds, and scientific laboratory instruments e.g., microscope, GC-MS is required.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to stand, walk, climb or balance, stoop, kneel, crouch, or crawl, taste or smell.

There are no requirements that weight be lifted or force be exerted in the performance of this job, although the employee will have opportunity to participate in field activities that involve lifting weight, e.g., water, sediment or other environmental samples or exerting force. Specific vision abilities required by this job include close vision, distance vision, depth perception, peripheral vision and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the regularly works in an office environment. The employee occasionally works near moving mechanical parts and is occasionally exposed to

outdoor weather conditions. The employee occasionally will work on large and small boats in Boston Harbor and Massachusetts Bay. The employee is occasionally exposed to fumes or airborne particles and toxic or caustic chemicals.

The noise level in the work environment is usually a moderately quiet office setting.

**September 2015**



MWRA  
POSITION DESCRIPTION

**POSITION:** Program Manager, Outfall Monitoring

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** ENQUAD/CNY

**BASIC PURPOSE:**

Develops MWRA's outfall monitoring program and acquires program approval from the regulatory agencies. Implements monitoring program through internal or contractual resources. Reports monitoring results within MWRA and to the regulatory agencies. Interprets monitoring results impact to the capital planning process, including Program Management, Sewerage and Law Divisions.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Director ENQUAD

**SUPERVISION EXERCISED:**

None

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Develops MWRA outfall monitoring program by reviewing scientific literature and water quality regulations.
- Coordinates monitoring activities with Program Management and Sewerage Divisions. Interprets results and assesses impact on capital projects.
- Leads negotiation of scope of monitoring program with regulatory agencies in consultation with the Law and Program Management divisions.
- Implements monitoring program of approximately \$1 to \$2 million using in-house or consultant resources.

- Coordinates monitoring program with state and federal government research and monitoring programs, local academic and non-profit research groups, and the Massachusetts Bays Committee.
- Organizes and analyzes monitoring data. Prepares reports interpreting data for scientific and lay audiences.
- Directs quality assurance programs for MWRA contractors.
- Reviews environmental chemistry aspects of other projects throughout MWRA upon requests of the Director.

**SECONDARY DUTIES:**

- Performs related duties as assigned.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of marine sciences, especially marine biology or chemistry as normally attained through a graduate level program or related field. A doctorate in marine science preferred; and
- (B) Knowledge of the design and implementation of marine monitoring programs, project management and data interpretation as acquired by four (4) to seven (7) years of related experience; and
- (C) Experience with assessing the quality of marine environmental data; or
- (D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Proficiency in database management and statistical analysis for marine environmental data.
- (B) Excellent interpersonal, oral and written communications skills.

**SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Motor Vehicle Operators License.

### **TOOLS AND EQUIPMENT USED:**

Office machines normally associated with the use of telephone, personal computer, including word processing and other software, copy, fax machine, measuring equipment, light tools and mobile radio.

### **PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to walk; stand; climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, depth perception and the ability to adjust focus.

### **WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employees frequently works in outside weather conditions. The employee occasionally works near moving mechanical parts, and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electrical shock.

The noise level in the work environment is usually loud in field settings, and moderately quiet in office settings.

**September, 1990**



MWRA  
POSITION DESCRIPTION

**POSITION:** Project Manager, Contaminant Monitoring System

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Environmental Quality

**BASIC PURPOSE:**

Manages, maintains, and participates in the design, development, operation, and technical support of the Authority's Contaminant Monitoring System.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Program Manager, Chemistry.

**SUPERVISION EXERCISED:**

Exercises close supervision of assigned technical staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Manages and participates in the design, implementation and troubleshooting of Contaminant Monitoring System (CMS) network and autosampler system.
- Manages, reviews, and analyzes data from the CMS network to insure sensor accuracy and correct system status.
- Manages, reviews, and maintains readiness of CMS network and the remote autosampler system through a proactive maintenance program and spare parts inventory control system.
- Reviews and maintains vendor relationships (warranty, service contracts, parts inventory, system updates).
- Insures that all work on systems includes proper work order management, staff coordination, field activity documentation and reporting, and utilizes MWRA's computerized maintenance management program.



- Responds to internal and external notifications and maintenance alerts.
- Reviews and recommends new sensor technologies, data transfer, processing, and visualization technologies, and data communication technology for applicability.
- Coordinates development and supervises installation and activation of new monitoring locations.
- Develops and generates periodic readiness and activity reports and updates documentation associated with the evolution, expansion, and maintenance of the CMS and the remote autosampler system.
- Trains staff in proper installation, operation, and maintenance of the CMS and the remote autosampler system.
- Participate in an on-call rotation to monitor and respond to water quality alarms and implement Consequence Management Plan response as appropriate.

**SECONDARY DUTIES:**

- Works with Trades and MIS staff as needed.
- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Four (4) year undergraduate degree in chemistry, biology, environmental sciences, a related engineering or science discipline, or other related field; and
- (B) Five (5) to seven (7) years experience in the installation, operation, and maintenance of on-line monitoring systems. Experience with water quality monitoring systems and water security preferred.
- (C) Two (2) to four (4) years supervisory experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of online analyzer and remote sensor technology in water monitoring applications.

- (B) Knowledge of water security monitoring and contaminant warning systems.
- (C) Demonstrated ability to gather, analyze, and present technical information.
- (D) Demonstrated ability to lead a project team through planning, organizing, directing, training, and assigning duties to subordinates.
- (E) Familiarity with water quality sensor technology.
- (F) Familiarity with both wired and wireless data collection and transmission.
- (G) Excellent computer skills; Word, Excel, PowerPoint, Maximo.
- (H) Strong organizational, written, and verbal communication skills are required.

**SPECIAL REQUIREMENTS:**

A valid Massachusetts Grade II Water Treatment License; or the ability to obtain same within twelve (12) months.

A valid Massachusetts Drivers License required.

**TOOLS AND EQUIPMENT USED:**

Laboratory test equipment, hand tools, mobile radio, telephone, beeper, personal computer including word processing and other software, copy and fax machine.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee occasionally is required to sit, stand and walk. The employee is frequently required to climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 25 pounds. Specific vision abilities required by this job include close vision, distance, color vision, peripheral vision, depth perception, and the ability to adjust focus.

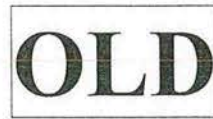
## **WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in an office, laboratory, and field environment. The employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high, precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, and risk of electrical shock.

The noise level in the work environment is usually loud in field settings, and moderately quiet in office settings.

**September 2015**



MWRA  
POSITION DESCRIPTION

**POSITION:** Senior Construction Manager

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Engineering

**BASIC PURPOSE:**

Manages the completion of the 17.6 mile MetroWest water Tunnel Construction from review of/preparation of design documents through completion of mining, concrete lining, pressure testing and start-up. Oversees the Construction Managers resident engineering and inspection work. Tracks and resolves contract issues, disputes and designs modifications. Reviews and recommends approval of progress payments, change orders and claims. Coordinates with the design engineer who is providing engineering services during construction. Coordinates the tunnel construction contracts with the other Projects that are part of the MWRA integrated waterworks improvement program.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Deputy Director, Capital Construction.

**SUPERVISION EXERCISED:**

Exercises close supervision of MWRA staff assigned to work on MetroWest Water Supply Tunnel design and construction. Works with and oversees the Construction Managers resident engineering and inspection staff and the design managers project representatives. Coordinates with other MWRA divisions and departments.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Manages the tunnel construction contracts associated with the MetroWest Water Supply Tunnel Project keeping the Deputy Director informed on progress and ongoing issues.
- Provides direct Authority oversight of Consultant and Contractor performance in the construction of the MetroWest water supply tunnel, including contract compliance, quality assurance and the review and recommendation for approval of progress payments and change orders.
- Provides oversight and guidance to the Construction Managers resident engineering and

inspection staff in regards to contract interpretation, schedule, cost, safety and quality of work. Participates in review of the Construction Managers and design engineers performance.

- Participates in the review and evaluation of consultant work products, including proposed change orders, claims and the investigation of differing site conditions.
- Participates in change order/claims negotiations and Dispute Review Board meetings as required. Prepares staff summaries for presentation to the Executive Director and Board of Directors.
- Participates in the disputes resolution process including dispute review board meetings.
- Acts as the MWRA construction representative to the working groups that have been established in Weston, Wayland, Framingham and Southborough.
- Participates in negotiations, discussions and progress meetings with all outside parties concerned with MetroWest tunnel construction, such as OSHA, the local fire departments, conservation commissions, etc.; regarding safety, tunnel rescue, blasting, traffic, noise, water supply, etc.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A four (4) year college program in civil, mining, sanitary or environmental engineering or related field; and
- (B) Experience in construction management of major water or wastewater facilities as acquired by at least ten (10) years of relevant experience of which four (4) must be in a senior position; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of concrete lining and grouting of pipelines, tunnels and shafts.
- (B) Experience in construction project change order preparation and administration, claims and dispute management.
- (C) Demonstrated experience in presenting to and successfully working with outside parties

and communities involved in a major construction project.

- (D) Excellent interpersonal, oral and written communication skills.

**SPECIAL REQUIREMENTS:**

A Massachusetts Registered Professional Engineer or eligible for reciprocity is preferred.

**TOOLS AND EQUIPMENT USED:**

Office equipment as normally associated with the use of telephone, personal computer including word processing and other software, copy and fax machine.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to walk; stand; climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, depth perception and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employees frequently works in outside weather conditions. The employee occasionally works near moving mechanical parts, and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electrical shock.

The noise level in the work environment is usually loud in field settings, and moderately quiet in office settings.

**July, 2000**



MWRA  
POSITION DESCRIPTION

**POSITION:** Deputy Chief Engineer

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Engineering & Construction

**BASIC PURPOSE:**

Developments, implements and manages, under the direction of senior management, coordination, control and QA/QC policies and procedures for water and sewer projects from planning through construction award. Purpose of these policies and procedures is to ensure design and construction projects comply with approved schedules and budgets.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Chief Engineer in the Engineering & Construction Department.

**SUPERVISION EXERCISED:**

None

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Acts as Authority's Chief Engineer in his/her absence.
- Directs, develops and administers a Program Management plan and program to ensure timely and cost-effective delivery of all water and wastewater projects. Develop and implement control and tracking methods and procedures to ensure project compliance with approved budgets and schedules and provide timely reporting to senior management of the status of all projects, associated issues impacting potentially schedules and budgets and provide proposals to address budget/schedule non-compliance issues.
- Responsible for all design delivery methods, specification types and schedules for all projects determined to support the system operations of all Water & Wastewater facilities. Ensures all projects are implemented using well developed work plans and well organized resources by selecting consultant services groups that deliver a technically

sound, controlled project on budget and on time.

- Manage the efficient & cost effective execution of capital investment programs and projects. Works effectively, cooperatively and in concert with Procurement, Law, Operations and Administrative divisions. Develops clear schedules and costs associated with all projects from both in-house and consultant teams.
- Responsible for design schedules and design budgets ensuring fundamental management controls, techniques, accountability for projects/programs under the control of the Engineering and Construction departments.
- Administers the monitoring, control, schedule & budget for all projects using scope control, performance reports, change requests and cost management/control using integrated time/cost management controls. Manages design documentation and record-keeping.
- Develops and implements a division wide QA/QC plan. Directs quality management during design and construction process. Ensures that Quality Assurance/Quality Control fundamentals and recommended practices and procedures for QA/QC are followed and managed by staff. Plans must ensure a project's fast tracking and the effect on contract document preparation that will result in a technical, effective and constructible projects.
- Performs engineering analysis, prepares engineering documents and project reports.
- Assists in the responsibility for providing safe MWRA operations for MWRA employees, its various constituencies and the general public. Provides input into Authority's information technology, security & emergency preparedness and response plans regarding the MWRA system.
- Works collegially with and ensures coordination with other MWRA divisions and departments and advances the goals, objectives and strategies of the MWRA business plan.
- Assists in implementing the goals and commitments of MWRA in the areas of customer service, diversity and affirmative action, economy and efficiency, health and safety, emergency response and security, and integrity and public trust.
- Assists in maintaining harmonious labor management relations through proper application of collective bargaining agreement provisions and established Human Resources policies.
- Participates in collective bargaining negotiations.

**SECONDARY DUTIES:**



- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A bachelor's degree in sanitary, civil or mechanical engineering or associated field. Advanced degree or other significant post-graduate educational experience in an engineering discipline is preferred; and
- (B) Eight (8) to ten (10) years demonstrated success in progressively responsible management positions in engineering design, engineering project management and/or construction functions relating to water/wastewater service delivery and major water/wastewater facilities; water system experience is preferred;
- (C) Other combinations of educational and professional credentials and senior operations-management-engineering-construction experience in the water/wastewater sector will also be considered.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of principles and practices of engineering.
- (B) Expert familiarity and management competence in the design and construction of water and wastewater facilities and systems.
- (C) Ability to provide superior program management leadership to engineering managers and staff engaged in engineering programs, projects and activities.
- (D) Excellent interpersonal, oral and written communications skills required.

**SPECIAL REQUIREMENTS:**

Registered Professional Engineer license required and;  
Certified Project Management Professional by the Project Management Institute preferred.

**TOOLS AND EQUIPMENT USED:**

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, copy and fax machine.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential

functions.

While performing the duties of this job, the employee is regularly required to sit, talk or hear. The employee is regularly required to use hands to finger, handle, feel or operate objects, including office equipment, or controls and reaches with hands and arms. The employee frequently is required to stand and walk.

There are no requirements that weight is lifted or force be exerted in the performance of this job. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.

The noise level in the work environment is usually a moderately quiet office setting.

**October 2015**



MWRA  
POSITION DESCRIPTION

**POSITION:** Building and Grounds Worker

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Maintenance/Deer Island

**BASIC PURPOSE:**

Performs a variety of maintenance and repair tasks to roads, grounds, buildings, structures and associated appurtenances together with other light maintenance tasks as assigned.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Building & Grounds Supervisor.

**SUPERVISION EXERCISED:**

None.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Cleans process tanks (including unbolting and securing of access covers), galleries, drains, culverts, and structures as required.
- Cleans process spills and upsets as required.
- Maintains roadways, walkways, fencing and gates as necessary.
- Performs clean-up and housekeeping tasks for work area to maintain a clean environment within designated area.
- Removes snow and ice from roadways, walkways, buildings and structures as necessary.
- Maintains the appearance of the plant grounds by cutting, trimming or weeding grass, shrubs, trees or ornamental beds.
- Digs and/or refills ditches and holes. Breaks, removes and repairs concrete as required.
- Collects and disposes of trash and other waste materials.

- Operates machinery, vehicles, material handling equipment, snow removal equipment, and tools as necessary to perform assigned work such as (but not limited to) tractors, mowers, cement mixers, cleaning machinery, etc.
- Operates motor vehicles such as vans and pick up trucks to transport materials and equipment to work sites, pick up and deliver materials, etc.
- Washes and cleans vehicles, tools and equipment.
- Moves material and supplies.
- Loads and unloads vehicles, carts, trailers, etc., as required.
- Performs work in a safe and professional manner.
- Reports and documents work being performed.
- Follows established safety, operating and emergency response procedures and policies as established by the MWRA.
- Trained in Confined Space Entry, CPR and First Aid, and be capable of entering, setting up, installing, disassembling confined space equipment and ability to work in a confined space.
- Perform work in compliance with Authority Integrated Contingency Plan.
- Ability to attain knowledge and work processes required to perform maintenance tasks required by Reliability Centered Maintenance or similar Maintenance Management Program.
- Performs light maintenance independently or as part of a team. Light maintenance shall include but not limited to:
  - Operates forklift or other light equipment not requiring a specific license.
  - Inspects and troubleshoots various systems and equipment.
  - With proper training sets up ladders, staging and rigging and utilizes hoists, jacks, dollies, lifts, etc. for proper access to job and to remove and install equipment.
  - Performs, documents and reports inspections and work performed.
  - Operates portable pumping, ventilation and other equipment necessary to support and accomplish assigned tasks.
  - Assists other trades in the performance of their work, as required, or as assigned.

- Lockout/Tagout of equipment to facilitate maintenance.
- Installs safety rails, changes light bulbs and replaces HVAC filters.

**SECONDARY DUTIES:**

- Performs related duties as required.
- Promotes and participates in the cross-functional work practices.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Basic reading, writing, mathematical, scientific and oral communication skills as normally attained through a high school education or the equivalent; and
- (B) Requires from six (6) to twelve (12) months of related buildings and grounds experience.
- (C) Satisfactory completion of training in accordance with cross-functional training program established at the MWRA.
- (D) Any equivalent combination of education/training and experience.

Necessary Knowledge, Skills and Abilities:

- (A) A working knowledge of the methods and tools required to perform building and grounds maintenance functions, to include the operation of a wide variety of machinery, vehicles, material handling equipment, hand and power tools and specialized machinery for roads, grounds, galleries, structures and facilities care.
- (B) Ability to follow written and oral instructions.
- (C) Skill in the operation of the listed tools and equipment.

**SPECIAL REQUIREMENTS:**

- A valid Massachusetts Class D Motor Vehicle Operators License.
- Complete competency based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

### **TOOLS AND EQUIPMENT USED:**

Motor vehicle, power and hand tools, mobile radio, telephone, beeper.

### **PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to handle, finger, feel or operate objects, tools, or controls and reach with hands and arms. The employee frequently is required to stoop, kneel, crouch or crawl. The employee occasionally is required to stand, walk, talk or hear, sit, climb, or balance.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move more than 100 pounds. Specific vision abilities required by this job include close vision, distance and peripheral vision, depth perception, and the ability to adjust focus.

### **WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in outside weather conditions. The employee regularly works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, and risk of electrical shock.

The noise level in the work environment is very loud in field settings and moderately loud at other work locations.

**December, 2001**



MWRA  
POSITION DESCRIPTION

**POSITION:** HVAC Specialist  
**PCR#:**  
**DIVISION:** Operations  
**DEPARTMENT:** Deer Island Maintenance, Metropolitan Maintenance

**BASIC PURPOSE:**

Inspects, maintains, repairs and installs heating, ventilation, air conditioning and odor control equipment and other light maintenance tasks.

**SUPERVISION RECEIVED:**

Works under the general supervision of a Unit Supervisor.

**SUPERVISION EXERCISED:**

Exercises supervision of entry level staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Installs, modifies, troubleshoots, repairs and tests new and existing heating, ventilation, air conditioning and odor control systems, equipment, and fixtures.
- Performs HVAC related activities specified by work order.
- Inspects and troubleshoots heating, ventilating, air conditioning and odor control equipment using tools and instrumentation and techniques of the trade.
- Performs preventative, predictive and corrective maintenance on heating, ventilation, air conditioning and odor control equipment according to vendor specifications.
- Installs duct work, hoods, ventilation devices and assemblies using manual and powered tools.
- Obtains necessary parts through established procedures.

- Follows established safety, operating, and emergency response procedures and policies established by MWRA.
- Operates motor vehicles, such as vans and pick-up trucks to pick-up and deliver supplies and equipment to work sites .
- Performs work in a safe and professional manner.
- Trains peers and subordinates as requested.
- Performs, documents and reports results of inspections and work performed.
- Perform work in compliance with Authority Integrated Contingency Plan.
- Operates equipment manually and through instrument panels and programmable logic control units as required in performance of maintenance tasks. Equipment may include, but will not be limited to pumps, valves, gates, meters, gauges, controllers, motor control centers and level control devices.
- Troubleshoots & corrects equipment/systems through the use of condition monitoring methods & equipment.
- Works from manufacturer's manuals and specifications, blueprints, schematics and verbal instructions to install, repair, troubleshoot, inspect, check & maintain mechanical, electrical-mechanical & hydraulic systems.
- Assists other trades in the performance of their work, as required, or as assigned.
- Performs light maintenance independently or as part of a team. Light maintenance shall include but not limited to:
  - Operates forklift or other light equipment not requiring a special license.
  - Inspects and troubleshoots various systems and equipment.
  - Installs and retrofits/new equipment related to plant systems.
  - Modifies and/or aligns existing equipment to specifications.
  - With proper training sets up ladders, staging and rigging and utilizes hoists, jacks, dollies, lifts, etc. for proper access to job and to remove and install equipment.
  - Operates portable pumping, ventilation & other equipment necessary to support assigned task.



- Greases and lubricates, replaces oil reserves, minor packing adjustments and opens hatches.
- Installs safety rails.
- Removes snow from immediate work area in order to perform tasks.
- Routine testing, lockout/tagout, operation (startup/shutdown) and adjustment of process equipment.
- Performs necessary cleanup and housekeeping for work areas and other light maintenance tasks.
- Performs related duties as required.

**SECONDARY DUTIES:**

- Promotes and participates in productivity improvement plan.
- Trains peers and subordinates as requested.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Basic reading, writing, mathematical and oral communication skills as normally attained through a high school education or equivalent; and
- (B) Three (3) to five (5) years experience in the operation, repair and maintenance of industrial HVAC & related equipment; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Thorough knowledge of the standard practices, materials, tools, occupational hazards and safety practices common to the trade.
- (B) Skills in the operation of tools, instruments and equipment of the trades.
- (C) Thorough knowledge of the standard practices, material, tools, occupational hazards and safety practices common in the trade.
- (D) Trained in Confined Space Entry, CPR and First Aid, and be capable of entering, setting-up, installing, disassembling confined space equipment and ability to work in a

confined space.

- (E) Ability to attain knowledge & work processes required to perform maintenance task required by Reliability Centered Maintenance or similar Maintenance Management Program.

**SPECIAL REQUIREMENTS:**

- Possession of a Valid Massachusetts Class D Operator's License.
- Possession of a Mass. Refrigeration License
- Complete competency based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

**TOOLS AND EQUIPMENT USED:**

Motor vehicle, power and hand tools, hoist, mobile truck radio, beeper.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.


While performing the essential functions the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee is frequently required to stoop, kneel, crouch or crawl. The employee is occasionally required to stand, walk, talk, hear, sit, climb or balance.

**WORK ENVIRONMENT:**

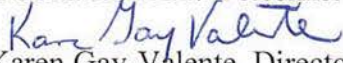
The work environment described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in outside weather conditions. The employee regularly works near moving mechanical parts, and is occasionally exposed to fumes and airborne particles, toxic or caustic chemicals and risk of electric shock. This job is hearing protection required and the noise level in the work environment is very loud in field settings and moderately loud at pumping stations.

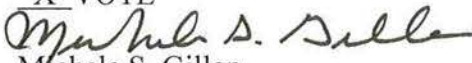
**August 2001**

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 14, 2015  
**SUBJECT:** Appointment of Information Technology Financial Manager, MIS

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**COMMITTEE:** Personnel  
  
Karen Gay-Valente, Director, Human Resources  
Russell J. Murray, Jr., Director, MIS  
Preparer/Title

           INFORMATION  
 VOTE  
  
Michele S. Gillen  
Director, Administration

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**RECOMMENDATION:**

That the Board approve the appointment of Ms. Patricia Russo to the position of Information Technology Financial Manager (Unit 6, Grade 10), at an annual salary of \$85,215.36 commencing on a date to be determined by the Executive Director.

**DISCUSSION:**

The position of Information Technology Financial Manager became vacant upon the recent promotion of the incumbent. At that time and consistent with the recommendation of the MIS 5-year-strategic plan to update job titles and responsibilities to better reflect changes in technologies and MIS roles and services, the position title and responsibilities were amended.

This position, which reports to the Director of Management Information Systems, is responsible for preparing and maintaining the MIS department's current expense budget and capital improvement plan as well as preparing and providing weekly and monthly spending information to MIS management. IT Financial Manager serves as the liaison between MIS and Procurement for equipment purchases and services and on consultant selections as needed. Additionally, this position plays an instrumental role in assessing both the MWRA and MIS IT spending pertaining to various IT infrastructure and application related activities and vendor spending, processes and records procurement activity, tracks project related expenses and reconciles telecommunication accounts and billing.

**SELECTION PROCESS:**

The position was posted internally and four candidates applied. All four candidates met the qualifications for the position and were referred for interviews. The four candidates were interviewed by staff from MIS and MWRA's Affirmative Action and Compliance Unit. Upon

completion of the interviews, Ms. Russo was selected as the best candidate for the position based upon her knowledge, skills, experience and education.

Ms. Russo has over thirty-one years of experience in information technology from technical writing to financial management. Ms. Russo has worked for the MWRA for over twenty-five years as the Information Systems Development Specialist. In this capacity, Ms. Russo has successfully performed the duties of the position as well as successfully completing several special assignments such as developing user documentation and training for MIS software applications and design formats and standards for all department produced documentation using Information Mapping. In her current position, Ms. Russo has also provided support to the Sr. CEB Analyst and in that capacity has become familiar with some of the duties of the ITFM position. Prior to coming to the MWRA, Ms. Russo worked at Wang Laboratories as a Technical Writer.

Ms. Russo possesses a Masters Degree in Accounting from Boston College and a Bachelor of Science Degree from Framingham State College. She also holds Certifications in Information Mapping and Information Technology Infrastructure Library Foundations in IT Service Management, a requirement of the position.

Ms. Russo has proven organizational skills and firsthand knowledge of MWRA's budgeting and purchasing process. She has earned the respect of her peers and supervisors.

**BUDGET/FISCAL IMPACT:**

Sufficient funds are included in the FY15 CEB for this position.

**ATTACHMENTS:**

Resume of Patricia Russo

Position Description

MIS Organization Chart

# Patricia Russo

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**Summary** IT professional with experience procuring hardware, software, and services. Excellent interpersonal, verbal and written communication skills.

**Experience** Massachusetts Water Resources Authority Chelsea, MA

**1990–Present** Assistant to the Senior CEB Analyst (December 2004 to Present)

- Manage CEB and CIP hardware and software requisitions, and oversee software license support agreement renewals. Work closely with vendors to obtain accurate quotes at the lowest possible costs. May also include license consolidation or multi-year contracts to reduce costs.
- Track hundreds of MIS Department CEB and CIP requisitions per year using the Infor Financial System, Excel and custom Crystal reports. Monitor purchases, delivery schedules and payments.
- Ensure consistent creation of dozens of inventory items to track MWRA assets. Involves researching manufacturer part numbers, determining appropriate commodity codes, and requesting NIGP codes.
- Prepare bid specifications and scope of work documents for complex, high-value purchases for posting on the Infor Strategic Sourcing Contract Management Supplier Portal.
- Monitor events on the supplier portal during bid solicitation. As needed, respond to bidder questions and request date extensions when there is a slow bid response to an event.
- Prepare and monitor the progress of Staff Summaries. Foster an environment of cooperation and collaboration with the Procurement staff.
- Track MIS blanket PO/contract expenditures to avoid overspending.
- Process all training payments and related travel returns.
- Manage the Authority-wide wireless accounts. Process payments and department charge backs, and distribute monthly invoices throughout the Authority, as per policy.
- Manage payment of all telecommunications accounts. Convert Verizon pdf files to Excel for processing via Infor with 100% accuracy. Ensure all voice and data telecommunications accounts are accurate and paid on time.
- Manage the renewal of MFD leases on an annual basis. Involves usage analysis to determine appropriate MFD model. Ensure invoices are accurate and payments are on time.
- Research and resolve all vendor payment discrepancies.
- Process monthly accruals, generate Infor reports, analyze expenditures and report month-end summaries.

**Accomplishments**

- To more efficiently share files with the Sr. CEB Analyst, I requested a network share and established the folder hierarchy. The CEB share ensures all CEB staff have access to the most up-to-date information and that all files are securely backed up daily.
- Developed and continue to maintain excellent relationships with vendors and MWRA staff in Procurement, Accounts Payable, Contracts Management and Warehouses.
- Enhanced the MWRA's License Tracking spreadsheets for greater efficiency.
- Developed new spreadsheet format to track Staff Summaries and Sole Source memos.
- Developed a process for converting all paper licenses into digital format. Saving them to the CEB share provides simplified access for CEB staff.

**I/S Development Specialist (1990–2004)**

- Developed user documentation and training for MIS software applications such as Lawson, Hyperion Pillar, PI ProcessBook & DataLink. Included user guides, training guides, job aids, online documentation, intranet-related documents and standard operating procedures.
- Designed formats and standards for all department-produced documentation using cognitive mapping theories (i.e., Information Mapping<sup>®</sup>).
- Conducted training for business-related software applications.

1984-1989

**Technical Writer**

Wang Laboratories, Inc. (1988-1989)

Lowell, MA

General Cinema Beverages Corporation (1984–1988)

Chestnut Hill, MA

- Documented financial and manufacturing software applications for end users. Authored user manuals, training guides, online help, and quick reference guides.
- Analyzed and evaluated software applications for consistency, accuracy, and user-friendliness.

**Education**

MBA Degree in Accounting, Boston College Graduate School of Management

B.S. Degree, Framingham State College

ITIL Foundations training

Information Mapping<sup>®</sup> certified

**Technical Skills**

- MWRA Applications: Lawson (purchasing, accounting, inventory control, timekeeping), Infor Strategic Sourcing Contracts Management, Hyperion Pillar (budgeting), and PI-ProcessBook and DataLink (operations reporting)
- Microsoft Office: Excel, Word, PowerPoint and Outlook
- Adobe Acrobat Pro
- Graphics programs: Canvas 8.0, Photoshop 7.0
- FastStone screen capture

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Information Technology Financial Manager (ITFM)

**PCR#** 8610031

**DIVISION:** Administration

**DEPARTMENT:** Management Information Systems

**BASIC PURPOSE:**

The ITFM will prepare and maintain the departments Current Expense Budget (CEB) and Capital Improvement Plan along with key financial data related to weekly/monthly spend and provide IT leadership with timely and accurate key financial information. The ITFM serves as the key liaison between IT, Finance and Procurement. The ITFM will play an instrumental role in assessing the IT financial spend pertaining to various IT infrastructure and Application related activities, vendor spend, processing and recording of all procurement activity and track project related costs.

**SUPERVISION RECEIVED:**

Reports to the Director, MIS.

**SUPERVISION EXERCISED:**

None.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Manages the department's CEB & CIP operations (requisition processing, PO notification, vendor payments, subsidiary ledger posting, accruals, end of year closeout, etc.) with accuracy, minimal errors in a timely manner and within agreed upon variances.
- Manages the annual CEB and CIP preparation(s), performing analysis research and by ensuring all required spending has been captured, all maintenance accounted for, projections are accurate and accountability controls are in place with responsible program managers.
- Formulates and reviews financial/management reports of the capital and operating expenses of the department including variance reports.
- Responsible to write and update budget narratives; also responsible to document, prepare, distribute and present semi-annual update on MIS Current Expense & Capital Improvement Program Budget to the MWRA's Advisory Board.

- Update, maintain and track MIS Training Budget
- Manages requisition process for all IT procurements including vendor maintenance and support agreements to ensure that there is no lapse in support. Furthermore, to ensure that the lead time to procure is understood and is kept to a minimum.
- Track, review and follow up with Purchase Orders, vendors, delivery schedules and confirmations.
- Responsible for monitoring, tracking and maintaining record copies of staff summaries and sole source memos required for all MIS purchases and communicate with procurement to secure consensus on approvals.
- Manage Telecommunication accounts for the MWRA including Voice, Data, & Security Network accounts, including review, download and convert telecomm data to Accounts Payable for payment processing through the Lawson System, serve as the point of contact for all billing, changes and updates with associated Carrier to generate reports on calls, charges and/or services. In addition, manage all IT Department Carrier accounting issues through to resolution.
- Maintain, review, edit and research authority-wide wireless, cell and Smartphone accounts. Work with both vendor and users and distribute monthly invoice for review and reimbursement to comply with MWRA policy.
- Manage, document and track MIS Blanket contracts.
- Develop and Maintain relationship with various Commonwealth of Massachusetts Strategic Sourcing Leads of Multiple Information Technology contracts. Review, research and recommend the use of State Blanket & GSA Contracts, Cooperative Purchasing Program and Consortium of Northeast State Contracts for MIS Procurement Purchases and participate on yearly Commonwealth activities to maintain open communication and opportunities available to the MWRA.
- Conducts special projects relative to the various planning and implementation efforts of the department, including testing of new features on the Financial Management System, Payroll/Human Resources System and/or Procurement System.

**SECONDARY DUTIES:**

- Perform related duties as required.

**MINIMUM QUALIFICATIONS:**

**Education and Experience:**

- (A) A four (4) year college program in management science, engineering management, computer science or related fields; and



- (B) Five (5) to seven (7) years experience developing and managing financial tasks such as generating and managing budgets, performing financial management analysis and expenditure forecasts, contract management, etc.
- (C) Any equivalent combination of education or experience.

**Necessary Knowledge, Skills and Abilities:**

- (A) Knowledge and understanding of public procurement procedures, contract monitoring and compliance techniques, financial modeling and budgeting.
- (B) Analytical and interpersonal skills
- (C) Written and oral communication skills.
- (D) Knowledge of the following is desirable: Proficiency with MS Office (including Word, Access and Excel, and Enterprise Resource Management (ERP) Budgeting, Purchasing,, Contracts and Sourcing software. Financial applications for Budgeting, Contracts Management and Procurement preferred.
- (E) Product knowledge of a variety of MIS goods and services

**SPECIAL REQUIREMENTS:**

Information Technology Infrastructure Library (ITIL) Foundation Certification is required or the ability to obtain within 6 months.

**TOOLS AND EQUIPMENT USED:**

Office equipment as normally associated with the use of telephone, personal computers including word processing and other software, copy and fax machines.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to walk and stand.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision and color vision, and the ability to adjust focus.

**WORK ENVIRONMENT:**

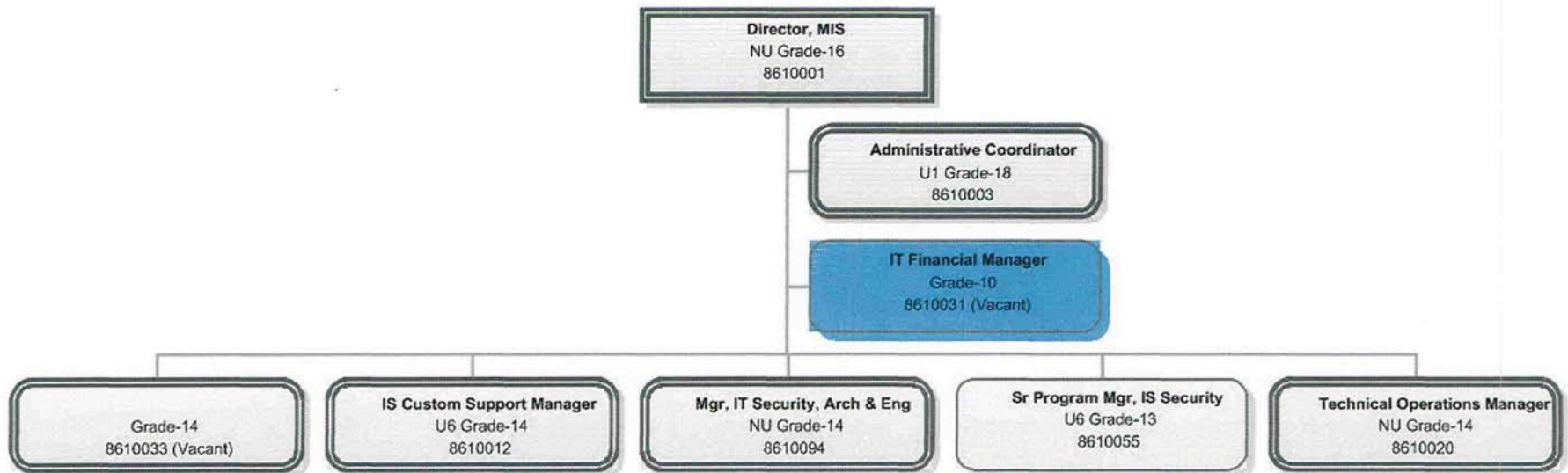
The work characteristics describes here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee works in various field settings and in an office environment. The employee is occasionally exposed to risk of electrical shock.

The noise level in the work environment is a moderately loud office setting.

**June 2015**

# Management Information Systems October 2015 Organization





# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard  
100 First Avenue, Building 39  
Boston, MA 02129

Frederick A. Laskey  
Executive Director

Telephone: (617) 242-6000  
Fax: (617) 788-4899  
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*Chair:* M. Beaton  
*Vice-Chair:* J. Carroll  
*Secretary:* J. Foti  
*Board Members:*  
A. Blackmon  
K. Cotter  
P. Flanagan  
A. Pappastergion  
B. Pena  
H. Vitale  
J. Walsh  
J. Wolowicz

## **BOARD OF DIRECTORS' MEETING**

to be held on

Wednesday, October 14, 2015

Location: 100 First Avenue, 2nd Floor  
Charlestown Navy Yard  
Boston, MA 02129

Time: 1:00 p.m.

## **AGENDA**

### **I. APPROVAL OF MINUTES**

### **II. REPORT OF THE CHAIR**

### **III. REPORT OF THE EXECUTIVE DIRECTOR**

### **IV. BOARD ACTIONS**

#### **A. Approvals**

1. Approval of Letter of Credit and Direct Floating Rate Revolving Loan Agreements (ref. AF&A B.1)
2. Proposed Changes to Pension Benefits (ref. AF&A B.2)
3. Approval of One New Member of the Wastewater Advisory Committee (ref. WW B.1)
4. PCR Amendments – October 2015 (ref. P&C A.1)
5. Appointment of Information Technology Financial Manager, MIS (ref. P&C A.2)

**B. Contract Awards**

1. Supply and Delivery of Sodium Hypochlorite to Deer Island Treatment Plant: Borden & Remington Corp., Bid WRA-4091 (ref. WW C.1)
2. Deer Island Treatment Plant Fire Alarm System Replacement Design and Engineering Services During Construction: RDK Engineers, Contract 6904 (ref. WW C.2)
3. Thermal/Power Plant Fuel Oil System Upgrade, Deer Island Treatment Plant: J.F. White Contracting Co., Contract 7061A (ref. WW C.3)
4. Engineering Services to Conduct Feasibility Study for Section 56 General Edwards Bridge Crossing of the Saugus River: Weston & Sampson Engineers, Inc., Contract 7500 (ref. W B.1)
5. Metropolitan Operations Paving: Newport Construction Corp., Contract OP-288 (ref. W B.2)

**C. Contract Amendments/Change Orders**

1. Dental Insurance: Delta Dental of Massachusetts, Contract A591, Amendment 2 (ref. AF&A C.1)

**V. CORRESPONDENCE TO THE BOARD**

**VI. OTHER BUSINESS**

**VII. EXECUTIVE SESSION**

**A. Real Estate**

1. Watershed Land Acquisition Program

**B. Security**

1. Update on MWRA Cyber Security Program

**VIII. ADJOURNMENT**

MASSACHUSETTS WATER RESOURCES AUTHORITY

**Meeting of the Board of Directors**

**September 16, 2015**

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on September 16, 2015 at the Authority headquarters in Charlestown. Vice-Chair Carroll presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Cotter, Flanagan, Foti, Pappastergion, Pena, Vitale and Walsh. Mr. Beaton was absent. Among those present from the Authority staff were Frederick Laskey, Executive Director, Steven Remsberg, General Counsel, Michael Hornbrook, Chief Operating Officer, Thomas Durkin, Director of Finance, Michele Gillen, Director of Administration, and Bonnie Hale, Assistant Secretary. The meeting was called to order at 1:10 p.m.

**APPROVAL OF MINUTES**

Upon a motion duly made and seconded, it was

Voted to approve the minutes of the Board of Directors' meeting of July 15, 2015, as presented and filed with the records of the meeting.

**REPORT OF THE EXECUTIVE DIRECTOR**

Mr. Laskey reported on various matters, including: productive meetings held with North Reading regarding the town potentially joining MWRA; the issuance and distribution of the annual audited financial statements to the Board; the annual meeting of the Board planned for October or November; a drill to be held at Wachusett Reservoir to practice emergency response procedures; and scheduling of the dedication of an employee-funded memorial for "Baby Doe" (subsequently identified as Bella Bond) on Deer Island.

BOARD ACTIONS

Approvals

Bond Defeasance of Future Debt Service

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director or his designee, on behalf of the Authority, to enter into, execute and deliver all necessary agreements and other instruments and to take such other actions necessary to effectuate the redemption and defeasance of an aggregate principal amount of approximately \$9,240,000 of outstanding MWRA senior bonds including to cause the escrow of cash and/or securities in an amount necessary to fund such redemption and defeasance, in order to reduce the debt service requirement by approximately \$11,141,450 in the FY17 through FY20 timeframe.

Memorandum of Understanding and Financial Assistance Agreement with the City of Cambridge for Implementation of CSO Control Projects, Amendment 12

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to execute Amendment 12 to the Memorandum of Understanding and Financial Assistance Agreement with the City of Cambridge for the Implementation of CSO Control Projects, increasing the award amount by \$5,265,069 from \$93,403,787 to \$98,668,856 and extending the term of the agreement by 12 months from December 31, 2016 to December 31, 2017.

PCR Amendments – September 2015

Upon a motion duly made and seconded, it was

Voted to approve amendments to the Position Control Register, as presented and filed with the records of the meeting.

Appointment of Program Manager, Instrumentation & Control, Deer Island Treatment Plant

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Christian A. Murphy, P.E., to the position of Program Manager, Instrumentation & Control (Unit 9, Grade 29) in the Engineering Services Department at the Deer Island Treatment Plant, at an annual salary of \$112,968.34, to be effective on the date designated by the Executive Director.

Appointment of Assistant Manager of Workers' Compensation and Labor Relations

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Susan Brazil to the position of Assistant Manager, Workers' Compensation and Labor Relations, Human Resources (Grade 11, Unit 6 Confidential) at an annual salary of \$86,645.00 to be effective on the date designated by the Executive Director.

Appointment of Security Services Administrator

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Lawrence Gladhill, Jr. to the position of Security Services Administrator (Unit 6, Grade 10), at an annual salary of \$90,896.38 to be effective on the date designated by the Executive Director.

Supply of Water to Southfield

Upon a motion duly made and seconded, it was

Voted to endorse Southfield's admission to the MWRA Water System, contingent upon Southfield's fulfilling the requirements of Policy #OP.10, Admission of New Community to MWRA Water System, and contingent upon the support of MWRA's member communities, as signified by a vote of MWRA's Advisory Board.





property, in that such discussion in open session may have a detrimental effect on the litigating and negotiating positions of the Authority.

It was stated that the meeting would return to open session to consider additional business.

\* \* \* \*

EXECUTIVE SESSION

\* \* \* \*

The meeting returned to open session at 1:25 p.m.

OTHER BUSINESS/CONTRACT AWARD

The following vote was taken by the Board of Directors in executive session, and it was further voted to authorize its release:

Alewife Brook Pump Station Rehabilitation: Waterline Industries Corp., Contract 6797

Voted to replace the Board's prior vote dated July 15, 2015 with the following: to approve the award of Contract 6797, Alewife Brook Pump Station Rehabilitation to the lowest responsible and eligible bidder, Waterline Industries Corp., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$11,947,677 for a term of 853 calendar days from the Notice to Proceed, but only if such award is not inconsistent with the decision of the Attorney General upon the bid protest of Fall River Electrical Associates Co., Inc.

The meeting adjourned at 1:30 p.m.